

TENNESSEE AGRICULTURAL RESEARCH
AND EXTENSION SYSTEM

FY 2002

ANNUAL REPORT
OF
ACCOMPLISHMENTS AND RESULTS

University of Tennessee Institute of Agriculture -
Agricultural Experiment Station
Agricultural Extension Service
and
Tennessee State University -
Cooperative Extension Program

Tennessee Agricultural Research and Extension System
Annual Report of Accomplishments and Results
FY 2002

The University of Tennessee Agricultural Experiment Station
The University of Tennessee Agricultural Extension Service
The Tennessee State University Cooperative Extension Program

GOAL 1: An agricultural system that is highly competitive in the global economy.

Overview

Major program/research areas included under Goal 1 of the Tennessee Agricultural Research and Extension System Plan of Work included: forages; value-added agricultural industries, agricultural management, beef management systems, crop production, the greens industry, limited-resource and small farm operators, small farm commercial vegetable and livestock production, consumer horticulture and USDA Small Farms Assistance Program. The following describes the projects and programs conducted by the UT Agricultural Experiment Station, the UT Agricultural Extension Service and the TSU Cooperative Extension Program in addressing these areas. More specific information related what was done and what impacts were achieved in each area is included under the Key Theme section.

Forages:

Approximately 40% of the agricultural income in Tennessee comes from directly from forages and forage-based production of beef cattle and dairy products. Winter feeding is also the largest single expense for Tennessee cow-calf producers and may run from 40 to 60 percent of the annual variable costs of feeder cattle production. Hay is the primary winter feed for 91% of the state's cow-calf producer. Eighty three percent of the hay is fed in large bales. Large bales, stored on the ground, unprotected from the weather can experience up to 30 percent loss of dry matter. This is a big loss in dry matter and increases cost of production. Storage methods that would reduce these losses would both cut the winter feed bill and improve profitability for cow-calf producers.

To address this issue, Extension specialists and agents developed educational programs that stressed storing methods to reduce hay spoilage. According to one animal science specialists findings, as a result of educational programs, the percentage of cow-calf producers that practiced storage procedures to reduce losses increased from 48 percent in 1996 to 66 percent in 2001-2002, an 18 percent increase or 8100 producers. Reports from results of proper hay storage demonstrations indicated that the Extension educational programs resulted in a reduction in cost of \$6,220,800 for the state's cow-calf industry. With 66% of the state's cow-calf producers carrying out appropriate hay storage practices, this has resulted in an annual savings of \$22.8 million or another way to state it, extra returns to the producer. Other agents also reported significant increases in savings due to producer adoption of proper hay storage practices. These results indicate that Tennessee cow-calf producers are aware of the hay losses

that result from storing large round bales unprotected from the weather and have taken steps to reduce these losses.

In the last several years, bermudagrass has become a more attractive crop for many Tennessee hay producers. Producers who change to this forage crop need information about its fertility and management requirements. In 2002, Extension agents and specialists conducted field days and programs on recommended practices for bermudagrass which resulted in a large number of bermudagrass samples submitted to the UT Forage Testing Laboratory.

Value-Added Agricultural Industries:

Tennessee's farming sector continues to be stressed by low profit margins, scarce production resources and changing marketing conditions. The farmer's portion of the average consumer dollar spent on food has decreased by one penny each year to 20 cents in 2000. Prices in commodity markets continue to fluctuate sporadically while production and operating costs continue to increase. Opportunities for income improvement often exist through value-added agriculture enterprises and activities. To appropriately consider, evaluate and take advantage of this value-added potential, folks in Tennessee's agriculture industry must be aware of opportunities and be informed about economic feasibility, planning and market development. The agriculture industry can also benefit from income opportunities not directly related to production agriculture, such as tourism, natural resource utilization and waste utilization.

The Center for Profitable Agriculture (formerly the Agricultural Development Center), continued its efforts in value-added income for Tennessee agricultural producers this year with numerous projects. A recent reorganization of the Center has allowed Extension to partner with the Tennessee Farm Bureau in a joint venture to expand the capabilities of the Center. It recently developed a food processing handbook for those interested in starting small food processing establishments. They also have assisted Tennessee's rapidly growing wine industry by providing consultants to new wineries both before and after startup. As a result of the partnership with the Farm Bureau, the Center will expand its efforts to increase profits through value-added strategies for Tennessee's agricultural producers.

Experiment station agricultural economists recently completed a feasibility study that has concluded that there is a viable market for biodiesel production in West Tennessee. The soybean industry is already a 35 million dollar industry in Tennessee. The increased income from a viable biodiesel facility would expand income for the producer even more.

Agricultural Management:

Over 10,000 Tennessee farm families have participated in the intensive phase of the MANAGE program. Within the past year, computerized financial planning software has been used around the kitchen table to individually plan with approximately 600 Tennessee farm families. Many farm families are experiencing extremely difficult times. Over the past 12 months, area farm

management specialists have worked with over 4,000 additional farmers on partial budgeting decisions. Ninety-eight percent of the families participating in the program this year said the program is useful. Ninety-six percent of the participants stated they would utilize the program again. Ninety-seven percent of the families stated that resources for Extension financial management educational programs should be increased or maintained. Ninety-eight percent of the families agreed that Extension financial management educational programs are valuable during non-crisis times.

Beef Management Systems:

Beef cattle producers are experiencing many changes in the beef supply chain, and information is becoming a critical part of the management and marketing of cattle. In 2001, the University of Tennessee Institute of Agriculture, cooperatively through the Agricultural Extension Service and the Agricultural Experiment Station, started up a Beef Cattle Initiative in collaboration with the Tennessee Cattlemen's Association and the Tennessee State Department of Agriculture. The initial efforts in the initiative were to identify strategies for improving Tennessee cattlemen's competitiveness in the market. Over the first year of the program a series of strategic planning meetings were held with input being provided by over 80 cattlemen, sale barn operators, Farm Bureau officials, researchers, Extension specialists and other individuals with a stake in the Tennessee cattle business. As a result of the planning efforts, the initiative has begun to implement a number of coordinated efforts related to beef production, management and marketing. Many of these efforts will involve existing programs like the Beef Cattle fIRM software program and the Beef Quality Assurance program. Specific objectives and priorities within the Initiative continue to be:

- Implement and Evaluate Electronic Animal Identification (EID)
Use EID in demonstration herds to show its usefulness and importance in record keeping and tracking animal performance to the feedlot and packing plant, capturing additional value, making herd management decisions, as well as in limiting producers' legal liability and enhancing trace back for food safety purposes.
- Integrated Resource Management
Provide producers with detailed guidance from Extension and agribusinesses to implement the IRM program into their operations. This program considers the goals of beef producers and the changes needed in their production, management and marketing programs to achieve those goals. It includes a good record keeping program such as THE Beef Cattle fIRM, and use of records to make improved management decisions and evaluate the impact of those decisions.
- Master Beef Producer Program
Offer an intensive management educational program to beef producers who depend on their beef cattle to make a contribution to family income. The program prepares beef producers to manage their operation at the highest level

economically feasible and provide them with information to help them achieve their goals in the beef operation. Five to seven meetings, each lasting three hours, will certify participants as Master Beef Producers.

- Building Awareness of the Tennessee Beef Initiative

Increase the visibility and attract resources for beef producers among Tennessee political leaders, as well as the state and national beef cattle industry.

Crop Production:

Experiment Station industry supported research resulted in several promising new transgenic cotton varieties for Tennessee. Field trials were conducted in 2002 and results were posted on the TAES Variety Website. Two sponsored protocols were also conducted in 2002 to quantitatively characterize new experimental strains through plant mapping. This work has identified several promising experimental strains with superior yield potential as well as transgenic resistance to certain herbicides and insect pests.

Additionally, approximately 6200 yield test plots on 339 agronomic crop varieties of corn (95 hybrids), soybean (182 varieties), wheat (46 varieties), and sorghum (16 hybrids) were conducted on six experiment stations located in the different physiographic regions of Tennessee. Data from these trials were combined with the TN County Standard Test data (1890 test plots) on 86 corn hybrids, 24 wheat varieties, 99 soybean varieties and 11 sorghum hybrids and published on-line and in hard-copy publications. A new experiment was initiated in corn and soybeans, in collaboration with a grain crops Area Extension Specialist and several county agents, to compare the results of small plots with large strip trials by imposing small plots ex post facto onto the strip trials. The experiment will be conducted for at least one more year. An experiment was initiated to evaluate the effects of rotation of GMO crops (corn, soybean, and cotton - all Roundup Ready varieties) in combination with ground covers (hairy vetch, crimson clover, wheat, poultry litter, and fallow) on crop production and associated changes in disease and pest pressures.

Greens Industry:

The Extension Master Gardener program continues to be very popular in numerous counties as hundreds of new trainees were enrolled and trained in 2002. Participants in local Master Gardener associations provided thousands of hours of volunteer service to Extension and Tennessee communities this year.

The horticultural industry in Tennessee is one of the largest and most diverse agricultural sectors in the state. A new Extension website provides information to firms ranging from farm-level businesses growing fruits, vegetables, nursery and greenhouse crops to post farm-gate businesses, such as landscape contractors and retail garden centers. Dr. Charles Hall, Professor

and Extension Specialist in the Department of Agricultural Economics at UT, developed this website, called the Horticultural Business Information Network, as part of his statewide Extension program in horticultural marketing and management. Dr. Hall, on the UTIA faculty since March, is developing an Extension educational program that emphasizes all aspects of strategic management; not only covering the intricate aspects of marketing, but also incorporating principles of finance, personnel management, cost accounting and managerial economics. This is reflected in his new website, containing the latest, most up-to-date information that will enable managers to make more informed decisions affecting the profitability of their respective horticultural enterprises. To visit the Horticultural Business Information Network, go to www.utextension.utk.edu/hbin, or follow the links for the Crops/Nursery section on the main Extension homepage.

Limited-Resource and Small Farmers:

In Tennessee, net farm income continued to fall in 2002. Marketing strategies, better management practices, value added agriculture and alternate crops and livestock were explored to minimize those losses and make Tennessee agriculture economically viable and globally competitive.

Limited resource and small farmers have special concerns about their viability and survival. According to 1998 USDA Census of Agriculture, 6900 farms (75.8 percent of all farms) in Tennessee have an income of less than \$10,000. Minorities operated 1,458 farms (1.6 percent of all farms). Although small-scale family farm operators produce a small percentage of the total agricultural output, they control significant agricultural resources (land, buildings, machinery and equipment). They are also major purchasers of agricultural inputs and are an important stabilizing force for rural, agriculture-related business communities. Problems of small-scale farm operators have traditionally included limited capital, uneven cash flow, lack of management skills and limited resources. The TSU Cooperative Extension Program organized agents and specialists into issue-programming teams to work in collaboration with The University of Tennessee (UT) Agricultural Extension Service (AES) to address these needs. The small farms team was organized to work with issues related to small-scale farm operators. The horticulture/urban gardening/master gardeners team was organized to address the issues related to home gardening, pesticide safety and environmental stewardship.

The TSU Cooperative Extension Program also provided leadership to incorporate the USDA Small Farms Assistance Program (SFA) into the ongoing Extension programs. The SFA program has been very successful in organizing small farmers into production and marketing cooperatives to help pool their resources and reduce their input costs and overheads.

TSU and UT Extension also collaborated to jointly fund an extension specialist to work with limited resource and small farmers to address their needs for farm enterprise diversification, farm produce marketing and to offer educational programs in best management practices. Additionally, an extension agent is assigned small farm responsibility in each county. The

small farm agents/specialists issue program team provides coordinated comprehensive service in this area.

Other Areas of Accomplishment:

Improving Genetic Composition Animals:

Within the past year, animal scientists at the University of Tennessee have continued to clone additional Jersey calves from a single adult somatic cell. The cloning project is part of a research effort to learn more about mastitis, a major problem in the dairy industry.

Allocations for Goal 1 Projects and Activities:

UT 1862 Research:

- Hatch - \$2,380,406
- Multistate - \$461,514
- McIntire-Stennis - \$70,443
- State Outlays - \$11,324,542

UT 1862 Extension:

- Smith-Lever b and c - \$1,865,654
- State and County Allocations - \$7,025,601

TSU 1890 Extension:

- Smith-Lever b and c - \$559,271
- State and Local Allocations - \$86,776

FTE's for Goal 1:

UT 1862 Research - 45.8

UT 1862 Extension - 83.0

TSU 1890 Extension - <unavailable at time of printing>

KEY THEME - SMALL FARM COMMERCIAL VEGETABLE AND LIVESTOCK PRODUCTION

TITLE: Farm Business Management Strategies for Small Farmers

ISSUE: In Tennessee, net farm income fell by thirteen percent from 1997 to 1999, mostly due to reduction in tobacco production and marketing. Farm business management and marketing strategies are needed to aid Tennessee farm families and assist agricultural industries to diversify and improve their operations, explore new markets and explore value-added products and alternate crops to fill the loss caused due to limit on tobacco acreage.

Limited resource and small farmers have been especially affected by the above-mentioned situation in Tennessee. According to 1998 USDA Census of Agriculture, 69,000 farms (75.8 percent of all farms) in Tennessee have an income of less than \$10,000. Minorities operated 1,458 farms (1.6 percent of all farms). Although small-scale family farm operators produce a small percentage of the total agricultural output, they control significant agricultural resources (land, buildings, machinery and equipment). They are also major purchasers of agricultural inputs and are an important stabilizing force for rural, agricultural-related business communities. Problems of small-scale farm operators have traditionally included limited capital, un-even cash flow, lack of management skills, and limited land resources. Alternative crop and animal enterprises based on available resources and on appropriate technical knowledge can provide small-scale family farms with a competitive advantage. USDA Small Farms Assistance Program has played a key role in addressing this issue with limited resource and minority farmers in Tennessee.

Home gardeners produce a significant quantity of vegetables and small fruits for their families and neighbors. TSU's home horticulture and master gardener program trains home gardeners and volunteers in appropriate production practices and safe use of home and garden pesticides. This educational program helps home gardeners use pesticides safely, efficiently, and protects the environment.

WHAT HAS BEEN DONE: The TSU Cooperative Extension Program collaborates with The University of Tennessee Agricultural Extension Service to cost share a full-time extension specialist with expertise in small farms to address the concerns of farm enterprise diversification as well as provide the technical support to the existing small farmers in Tennessee. This specialist works statewide to provide educational programs to limited resource and small farmers to address their needs of farm enterprise diversification, farm produce marketing and best management practices. Additionally, UT Extension has assigned an extension agent in each county to work with small farmers. At TSU, a small farms programming team composed of agents and specialists has been organized to provide coordinated planning, implementation and evaluation of programs.

Tennessee State University Cooperative Extension Program provided leadership to incorporate the USDA Small Farms Assistance Program into the ongoing extension programs with similar goals and initiatives. The Small Farms Assistance (SFA) program has been very successful in organizing small farmers into small cooperatives to pool their resources, reduce their inputs and overheads. Several field days and educational programs were held to demonstrate best management practices.

The Home Horticulture Programming Team composed of county agents and lead by an extension specialist met twice to discuss the strategy to address the issues of home gardening, pesticide usage by home owners and training of volunteer Master Gardeners to extend the outreach of Cooperative Extension agents in their communities.

IMPACTS: The Small Farms Programming Team provided several educational workshops in a variety of subject matter areas: producing and marketing goats, alternative crop production, small farmer cooperatives/associations, niche marketing through local farmers markets and individual roadside farm produce stands. Field crop demonstrations were conducted in Franklin, Hardeman, Tipton and Rutherford counties.

The TSU forestry extension specialist collaborated with several agencies, departments and individual farmers to meet the needs of forestland owners in Tennessee.

Small Farms Assistance (SFA) program specialists provided technical assistance to approximately 360 small and limited resource farmers in 14 counties. The assistance through this program has helped several farmers to seek private banking and/or government loans to finance their struggling farm operations, re-evaluate their farm operations and make decisions about continuing in farming or seeking off-farm employment. One SFA success story is the formation of Northern Tennessee Farmers Association (NTFA). The efforts are underway to form Small Farmers Associations in Middle and Western Tennessee.

FUNDING: Tennessee State University Cooperative Extension Program, CSREES/USDA, and USDA – Office of Outreach (2501 Program).

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TITLE: Marketing Cooperative for Small Farmers

ISSUE: Individually, small and limited resource farmers are often unable to meet vegetable market requirements for variety, quality, quantity and timing. Organizing and combining resources through a cooperative effort will help them be competitive. It is also important to select crops that can quickly establish a market niche.

WHAT HAS BEEN DONE: During FY 2000 Extension specialists worked with small farmers in West Tennessee to organize a production and marketing cooperative. After many meetings under TSU leadership with equal partnership with The University of Tennessee, Southern Growers, Inc. was incorporated in Tipton County in July 2001. As of September 30, 2001, Southern Growers, Inc. has received a total of \$300,000 in grants from both USDA Rural Development and private organizations to help expand the cooperative's production and marketing efforts.

In FY 2001 sweet potatoes were selected as the initial commodity of this cooperative. Using grant funds from the sources listed above, Extension purchased seven varieties of sweet potato slips and established an acre (1/7 acre per variety) demonstration plot in Tipton County.

The total cost of this demonstration was \$400 for slips, \$50 for chemicals, and \$2,600 for variable and fixed expenses plus labor.

IMPACTS: Results were presented to 24 small farmers at a field day on August 30th 2001. Potatoes from the demonstration plot have been harvested with a calculated yield of 450 bushels per acre. At current prices of \$15.00 per bushel, this would yield a potential gross income \$6,750 per acre minus expenses (\$3,050) or a net income of \$3,700. The most productive varieties were White Triumph followed by Vardaman. All varieties are being evaluated for taste and will be selected for expansion in two market areas: value added markets (such as pies, cakes etc) and direct home consumption. Extension will continue to provide technical and other support as necessary to help this cooperative continue to grow. Future plans include exploring other commodities and new market opportunities that will help sustain small farmers in West Tennessee. In 2002 seventy three acres of sweet potatoes were planted in Hardeman County with financial support from FSA.

FUNDING: Tennessee State University Cooperative Extension Program

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TITLE: Land Ownership and Estate Planning for Black Farmers

ISSUE: Land ownership for black farmers: Black farmers have faced many obstacles in their efforts to retain ownership of their land. In 1910, black farmers owned approximately 15.6 million acres. When their number peaked in 1920, there were over 926,000. The number of farms in the United States has declined almost steadily since the mid-1930's, but the rate of loss has been significantly heavier among black farmers than other farmers. The 1997 Census of Agriculture count totaled the number of black farm operators in the U.S. at 18,451 and farmland owned by blacks at 1,499,083 acres. The loss of land points to the need for an intensive education program that will address estate planning, making wills, filing the deed, property ownership rights and responsibilities, property taxes, the value of land and legal assistance. Significant efforts were made to identify the counties, communities and individuals that might benefit from the land ownership educational programs.

WHAT HAS BEEN DONE: Identified 1,900 black landowners within 22 counties. Prepared and distributed a mailing list of black farmers in 18 counties to small farm assistance program management specialist. This mailing list will be used to offer land ownership educational information through workshops and meetings. Two Land Ownership & Estate Planning In-service Trainings were conducted in the Central and Western District. An Agricultural Outlook Workshop was held in Winchester, TN. County, state, area and USDA personnel presented current information regarding various agricultural programs and products/services that are available for Franklin County farmers and landowners.

IMPACT: Thirty-seven county agents and extension directors participated in land ownership meetings. Eight farmers and 15 landowners were provided with information on the most

common ways land is lost and given practical advice on the need for and advantages of a will, will preparation and execution. An attorney has been identified and he has volunteered his service to help any of the Northern Tennessee Farmers Association members with Making Wills. Two absentee landowners were referred to West Tennessee Legal Services for pro bone representation. One individual made a will. Thirty-seven county agents and extension directors participated in land ownership meetings. Sixty-five Franklin County farmers and landowners attended the Agricultural Outlook Workshop. Contacts made through this workshop by Tennessee State University small farm agent led to a \$7,500.00 USDA Rural Development Grant that was used to purchase a plastic mulch layer, water wheel planter and mulch lifter.

FUNDING: TSU Cooperative Extension Program

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TITLE: Master Gardeners and Small Farmer Training

ISSUE: According to the 2000 United States Census, there are 9,412 homeowners in Hardeman County. This is an increase of 1,136 homeowners from the 1990 census. As Tennesseans establish homes and homeowners acquire new or expanded interest in horticulture, it has created an ever-expanding demand for horticulture information. From personal observation, home visits, office visits and phone consultations, I have seen this to be true in Hardeman County.

WHAT HAS BEEN DONE: Master Gardeners are recruited from the general public in Hardeman County and surrounding areas. Participants undergo 30 hours of training for 12 weeks, which covers a range of topics, including soils, garden and lawn equipment maintenance, lawn management, landscape design, woody ornamentals, herbaceous ornamentals, interior plants, and pesticide safety.

Agent gave homeowners fruit trees for home planting and to establish small orchards. The trees were donated by Cumberland Valley Nursery.

Agent conducted a lawn demonstration on fertilization and weed control.

IMPACT: With an increase in MIS contacts in horticulture and county clientele interest, Agent started a Master Gardener Program in 2001 and continued the program in 2002. The enrollment of the Master Gardener Program increased from 9 participants in 2001 to 18 participants in 2002. This is a 30-hour course that covers 12 different disciplines over a 12-week period in the areas of gardening and horticulture. The course includes the following topics: vegetables, botany, soils, entomology, pathology, lawn & garden equipments and maintenance, landscape design, woody ornamentals, home lawns, herbaceous ornamentals, green house management and pesticide safety. Upon completion of the master gardener classes, the master gardeners are required to give back 30 hours of volunteer time. This would be a value of \$5,400 of volunteer work (18 gardeners x \$10.00/hr x 30 hrs = \$5,400).

Agent continues to work in cooperation with Cumberland Valley Nursery. Cumberland Valley Nursery is located in McMinnville, Tennessee. The nursery donated 200 fruit trees to the Hardeman County Small Farm Program. Two homeowners received 75 fruit trees each to help establish an acre fruit orchard. This was an initial cost savings of \$213.75/homeowner(75trees @ 3.50) to establish their orchard. The remainder of the trees were given to Extension clientele for home planting.

The lawn demonstration conducted saved the homeowner 37.5% of the total cost of maintaining the lawn if services were provided by commercial landscaping business. The lawn demonstration has been an effective teaching tool.

FUNDING: Extension Fund

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TITLE: Home Garden/Vegetable Production

ISSUE: Home gardeners across the nation are taking special interest in enhancing their gardening skills. According to a survey conducted by the National Garden Association, 40 to 50% of gardeners listed having fresher vegetables and fresher tasting vegetables as their reasons for gardening. This trend has continued for several years. From personal observation through farm visits, office visits and phone consultations, there has been an increasing demand for current gardening information, practices and cost efficient ways for producing high quality vegetables in Hardeman County. A major concern expressed by Small Farm Advisory Committee was the increase of roadside vegetable panhandlers. The local garden centers have continued to support the Small Farm Program by requesting educational information for their clientele.

WHAT HAS BEEN DONE: Extension Agent used the following educational activities to increase growers knowledge in vegetable production practices:

1. Conducted vegetable demonstrations (Sweet Potato and Southern Peas)
2. Networked with vegetable specialist with the Tenn. State Univ. and Univ. of Tenn.
3. Networked with Vegetable specialist with Tenn. Department of Agriculture.
4. Conducted Sweet Potato Field Day
5. Developed a series of news articles, newsletters and mass media material to inform growers of the latest information.

IMPACT: The Small Farm Program has been successful in providing vegetable growers of Hardeman County with educational information and technical assistance in the area of Home Garden/Vegetable Production.

The following information is a result of programming effort made by Agent.

Agent increased weed control effectiveness from 55 to 90% with calibration demonstrations with local growers. Agent helped growers save \$6.39/A by increasing the rate per acre of chemical (Poast Plus) and increasing water volume. This was a cost savings of \$319.50 for the growers ($\$6.39 \times 50\text{acres} = \319.50). According to a local grower, the results from increased weed control decreased the use of manual labor to help control weeds.

Agent conducted an on-farm demonstration on weed control in Southern Peas. The grower traditionally used Basagran and Poast Plus as his weed control treatment. This treatment was giving the grower only 60% weed control. Agent decided that this would be a great opportunity for a demonstration. Agent used Pursuit and Dual as a preplant incorporated treatment. The treatment was timely and the field had good moisture which resulted in 90% control and eliminated a second application of herbicide.

Agent conducted a no-till Southern Pea demonstration. Agent sprayed roundup as a burn down application and Pursuit and Dual as a preemergence application. The herbicide combinations gave 90% control of weeds. Agent did not have to apply a postemergence application to plot. The peas yield 95 bushels /acre.

This year, the result of a sweet potato demonstration provided yield information on the production of sweet potatoes in Hardeman County. The average yield was 455 bushels per acre. At the current price of \$12.00 per bushel, this would yield a potential gross income of \$5,460 per acre.

As a result of last year's demonstration with Southern Growers Inc., a local grower decided to grow 73 acres of sweet potatoes. Agent provided grower with technical assistance with recommended cultural practices, soil test recommendation results, weed control, and insect control. As an effective teaching method, agent held a sweet potato field day to discuss different production practices. Twenty-eight participants were present at the field day held September 12, 2002.

FUNDING: Extension Funds

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TITLE: Improving Marketing Skills for Agricultural Producers

ISSUE: For farmers to remain economically competitive in the years ahead, improving marketing skills is a must. Focus group sessions over the last four years with agricultural producers (forty-nine) identified marketing as an important need of farmers. A listening session consisting of twenty-six area agricultural leaders and lenders also identified marketing skills as a weakness of agricultural producers. With the low prices of agricultural commodities it has become essential that farmers improve their marketing skills.

WHAT HAS BEEN DONE: Area specialist planned and conducted four marketing meetings with 188 agricultural producers attending. Four meetings were conducted on the 2002 Farm Bill with 127 producers and agricultural business leaders attending. Three newsletters were written containing marketing information. One newspaper article on livestock marketing was written. Area specialist made sixty-nine one-on-one marketing related contacts with producers.

IMPACT: A survey was conducted to evaluate the marketing meeting in Coffee County. The survey showed the following:

- 17% increased their knowledge in developing a marketing plan.
- 22.7% increased their knowledge of basis.
- 21.3% increased their knowledge of seasonality of pricing.
- 21.3% increased their knowledge in fundamental analysis.

A survey was conducted to evaluate my marketing educational program at the small farms meeting in Winchester. The survey revealed that producers knowledge in marketing increased by thirty-six percent.

One producer marketed 50,000 bushels of his corn at twenty cents over while others received fifteen cents over. (\$4,000)

One producer priced 10,000 bushels of corn for January 2003 delivery at \$2.98 per bushel and another 12,500 bushels for January 2003 delivery at \$2.86 per bushel. With the current price of January corn at \$2.48 per bushel these transactions will increase the producer's net farm income by \$9750.

In the fall of 2001 two producers put basis contracts under 15,000 bushels of soybeans at twenty cents under. These transactions netted the producers a dime a bushel or \$1500 for both transactions.

One producer contracted 10,000 bushels of corn at \$2.60 for January 2002 delivery. (\$5,000)

One producer received a total of \$12,000 in LDPs for 1999, 2000, and 2001 after I informed him about this program.

One producer purchased a March 2003 call option contract on corn and a December put option contract on corn.

One producer received \$2.37 per bushel for his entire 2001 corn crop. This price is about fifty cents per bushel more than what he could have received at harvest.

FUNDING: Extension funds

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TITLE: Small Farm Limited Resources Beef Production

ISSUE: In Franklin County, traditional beef cattle operations report numbers of around 13,877 on 553 farms with an average herd size of 26 brood cows per farm (1997 Census of Agriculture). Advisory group meetings were held with beef producers and these meetings contained producers from all geographical regions of the county and a diversified group of farmers. Producers indicated that they would like to learn production topics to make their respective operations more productive. Topics of interest to these producers were improving genetics, marketing, herd health, forage management and record keeping.

WHAT HAS BEEN DONE: TSU small farm agent attended the Cumberland Beef Day program in Sparta with six producers. Agent, along with the area farm management specialist, conducted a Beef Cattle Record Keeping workshop with fourteen producers present. Agent conducted a Freeze Branding workshop with twenty-five producers attending. Agent made 184 livestock contacts.

IMPACT:

- Attended Cumberland Beef Day program with six producers.
- One producer tested forage and collected blood samples for mineral deficiencies.
- Agent had one producer built hay storage facility for 200 round bales.
- Agent had fourteen producers attend Beef Cattle Record workshop
- Agent conducted Freeze Branding workshop with twenty-five producers attending.
- Agent had one producer freeze brand thirty-four brood cows.
- Pre/post evaluations of Beef Cattle Record workshop indicated the following increase in knowledge:
 - 24% knowledge increase of the importance of beef cattle records
 - 28% knowledge increase of what is management
 - 28% knowledge increase of factors affecting beef profitability

FUNDING: Extension funds.

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TITLE: Small Farm Commercial Vegetable Production

ISSUE: In Franklin County we have a total of 14 commercial vegetable producers growing 142 acres of vegetables. The 1997 census of agriculture values these crops at \$127,000 dollars annually. Tennessee vegetable marketing numbers obtained from University of Tennessee vegetable specialists indicate that 84% of the state's vegetable consumption is transported into the state. Tennessee Agriculture Statistics numbers indicate a steady decline in Tobacco acreage in Franklin County due to quota reductions of 45% in 2000 and increased demand for quota. Tobacco producers will be hard pressed to find alternative crops and marketing avenues to regenerate lost income. Across the board low crop prices and increased production costs have forced many small row crop farmers to look at low input high value crops.

WHAT HAS BEEN DONE: The small farm agent held a workshop on Blueberries and Bramble production with eighteen producers attending. The TSU small farm agent, in conjunction with several state and federal agencies, conducted the Franklin County Agriculture Outlook Conference to help producers identify available services which was attended by sixty-five producers. Agent conducted a Commercial Vegetable meeting and field day that was attended by a total of thirty-one producers. The small farm agent attended the Commercial Vegetable Field Day at the Plateau Experiment Station with five producers, as well as, conducting three on-farm demonstrations. The small farm agent, with the assistance of local beekeepers, helped form the Elk Valley Beekeepers Association. The small farm agent made 120 vegetable contacts.

IMPACT: Post-program evaluations for 2002 programs indicate the following:

- seven program participants have soil tested
- five producers have utilized irrigation
- eight producers have improved insect control
- eight have utilized recommended varieties
- ten producers have improved marketing skills
- Outlook evaluations indicated twenty-one percent had increased knowledge of the Tennessee State University Small Farm Program.

Agent secured a \$7,500.00 USDA Rural Development Grant for Southern Middle Tennessee Producers Association. Received a \$2,000.00 Tennessee Department of Agriculture Honeybee Inspection Grant. The Elk Valley Beekeepers Association currently have twenty members.

FUNDING: Extension funds.

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TITLE: Home Horticulture and Pest Control and Small Farmers

ISSUE: There are 19635 residences in Gibson County. Well maintained homes and lawns improve the county property tax base, improve the quality of life, makes the county more attractive to industry and improves the environment through indication of proper pest management. Small farmers and fruit growers face many of the production problems that home owners face as they seek to supplement their income.

WHAT HAS BEEN DONE: The extension agent utilized the following methods in working with home owners and small farmers.

1. Developed timely news articles to inform and address pest problems as well as proper planning, nutrition and planting practices.

2. Conducted one county wide garden meeting, one county wide home horticulture meeting and implemented a Master Gardener program in the county.
3. Answered office calls.
4. Made home and site visits when appropriate.
5. Networked with Andrew Winston to work with small farmers.

IMPACT: During 2002 70 calls and home visits were made concerning tree problems. If 50% of those visited adopted U.T. recommended practices which resulted in one tree per site being saved, these visits saved Gibson County residents approximately \$18,000 in tree removal and replanting

cost(current tree removal cost are \$500 minimum/ tree and 3 gallon container trees are approximately \$35). 40 lawn visits and calls were handled. Assuming an average size yard in Gibson County of 2500 sq. ft and a cost of establishment of a new lawn/landscape at \$150/1000 sq. ft. this represents a \$15,000 impact. 75 pest control calls were handled. Approximately 90% of these calls had recommendations of either no pesticide use or non-restricted pesticide usage. At an average savings of \$35 by homeowners handling the pest problem themselves instead of contacting a pest control company, residents saved approximately \$2600 through U.T recommendations. 55 calls were made concerning home vegetable production. An estimated increase in vegetable production or reduction of cost through timely pesticide applications and fertility practices of \$100 represents an impact of \$5500. Worked with or currently working with nine small farmers. Networking with ANDrew Winston and U.T. specialist. If advise increases production and marketing ability of \$1000/ farmer this will represent a \$9000 impact. Worked with local nursery to identify pest problem and control. This pest had infected approximately 1,000 compacta holly plants. Through the use of U.T. recommendations to alleviate the pest to make plants more attractive thus increasing the retail value, an estimated \$4,000 impact was made. Began a Master Gardener program to address the needs of county residents. With 10 participants and a service requirement of 30 hours each, a value of labor of \$10/hour, this represent \$3000 worth of volunteer service to Gibson Co. Asisted 18 residents in either planning a landscape or plant selection based on light requirements, past plantings and disease problems, soil type, etc these residents saved a total of \$27000 by purchasing the proper plants and doing the job themselves.

FUNDING: Regular Extension Funds

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TITLE: Alternative Agriculture

ISSUE: All farmers across Tennessee are facing significant cutbacks in the total pounds of tobacco they can grow. This in turn decreases their gross income from farming. In Sumner County (based on TN Dept. of Ag. Statistics) the total acres of burley tobacco produced went from 2600 acres in 1999 to 1400 acres in 2002. This reduced farm income county wide by 3 million dollars.

Due to the changes that are going on in the tobacco situation, many farmers are evaluating and considering implementing alternative enterprises. Based on recent budgets from U.T. Ag. Extension Economics Dept., there are several potential vegetable and small fruit alternatives for potential marketing alternatives. Based on USDA statistics, vegetable and small fruit production has gradually increased in Tennessee over the past 5 years (approximately 15%). This resurgence of the fruit and vegetable industry is due in part to the tobacco situation. Sumner County Tobacco Committee has stated that their number one concern at this time is what alternative crops will help in replacing the lost income due to reduced acreages of tobacco. Extension in Sumner County will assist tobacco farmers in looking at and identifying alternative enterprises with a specific emphasis on small fruits and vegetables. This effort will be marketed to Sumner County farmers through newspaper articles, promotional fliers of upcoming events, quarterly general ag. newsletters (approximately 1700 farmers), educational and promotional pamphlets at numerous agricultural events, personal letters and farm visits to encourage low income and minority farmers to participate in alternative ag. opportunities.

WHAT HAS BEEN DONE: Ten area educational meetings were utilized to promote Alternative Agriculture by Sumner County Extension Staff. 1. Greenhouse and Nursery Production; 2. Fruit and Vegetable Production Field Day (TSU); 3. Planting Black Walnut and Pecan Trees; 4. Goat Production; 5. Vegetable and Fruit Crop Production Field Day (Spring Hill Experiment Station); 6. Vegetable and Fruit Crop Production Field Day (Plateau Experiment Station); 7. Fall Vegetable Production Marketing for Small Farmers; 8. Shrimp Production in Tennessee; 9. Tennessee Fruit and Vegetable Association Conference; 10. Fruit and Vegetable Production Meeting. Over 100 Sumner County farmers attended one or more of these production meetings or field days dealing with alternative agriculture.

Eight on-farm demonstrations relating to Alternative Agriculture were conducted in Sumner County: 1. Strawberry Weed Control Program; 2. Strawberry Plasticulture Production Techniques; 3. Grape Disease Control; 4. Drip Irrigation in Blackberries, Tomatoes and Pumpkins; 5. Disease Control of Pumpkins; 6. Double Cropping Tomatoes on black plastic following annual strawberry production; 7. Overhead Frost Control of Strawberries (Row Covers versus Overhead Irrigation); 8. Pumpkin Varieties Evaluation. These participants are some of the largest alternative agricultural producers in Sumner County and have assisted over 50 farmers in evaluating the opportunities of adding alternative agricultural enterprises to their farming operations.

An Alternative Enterprise planning committee was established and met twice during 2002 to help plan and evaluate Extension efforts to promote alternative agriculture. Over 100 producers have responded to letters and news articles which requested that those interested in alternative agriculture contact Agricultural Extension for educational information and updates on upcoming events.

Four newsletters and 10 or more news articles were sent to a mailing list of over 300 farmers to help promote alternative agriculture in Sumner County.

Plans are underway to form an Alternative Agriculture Association in Sumner County and hold quarterly association meetings to promote alternative agriculture enterprises.

Extension has had a collaborative effort with numerous specialists from U.T. over the past few months in vegetable production: 1. Dr. Steve Bost - disease control; 2. Dr. Allen Straw - U.T. Fruit & Vegetable specialists; 3. John Buchanan - fruit and vegetable irrigation; 4. Allen Galloway - area farm Manage specialist, 5. recently began networking with TSU Small Farm Assistance Program specialists - Pam Rye; 6. Dan Wheeler - U.T. Ag. Development Center.

IMPACT: Eight Sumner County farmers provided demonstration plots to evaluate alternative agriculture research. One hundred farmers were identified through Extension efforts in adding alternative enterprises to their farming operation. It is estimated that Sumner County farmers will increase the total income from alternative agricultural enterprises during 2002 by one hundred thousand dollars. Ten Sumner County producers began producing alternative agricultural products in 2002 for the first time.

FUNDING: UT/TSU Extension and Tennessee Farmers Co-Op

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TITLE: Removing Distribution Barriers, Confronting Small-Volume Fruit and Vegetable Growers

ISSUE: Changing food consumption patterns for fresh produce favor the emergence of convenience (precut) packaging, which has created opportunities for fruit and vegetable production. Many suggest small farmers should switch from tobacco to these alternative crops, but consolidation and increased concentration within the fresh produce distribution channels are also occurring. Changes in information technology, processing, wholesaling, and transportation continue to favor larger market participants who also benefit from specialized managerial and coordination activities.

WHAT HAS BEEN DONE: Work on the Initiative for Future Agriculture Food Systems (IFAFS) project focused on the preparation of the final versions of five survey instruments, creating sampling designs, and completion of the survey processes. The five groups surveyed were 1) growers, 2) extension agents, 3) public market managers, 4) marketing agents, and 5) state Departments of Agriculture. Once each instrument was finalized, attention turned to identification of the interviewees for each of the five groups of surveys in each of the four states. Separate strategies for gathering information from agents, the Tennessee Department of Agriculture, and managers of the organized year-round public farmers' markets were completed. Results indicated that commercial operations were diversified enterprises with approximately half of the respondents interested in expansion. Limiting factors to expansion were harvest labor availability, market outlets, prices received, labor management, and credit availability. Seventy percent did not use brokers/wholesalers. Few post-harvest handling practices were followed.

IMPACT: Information gathered from the surveys and interviews will provide a benchmark for identifying distributional barriers confronting small-volume growers for a variety of produce commodities. Because all of the elements of the distribution systems are involved, this will be the first time that simultaneity problems can be addressed. The nature of the database will also permit an evaluation of the importance of coordination among sites and agencies involved in fruit and vegetable marketing.

The goal is to pool the information obtained from each state for each of the stakeholder groups. Similarities and differences among the states will be noted. Results will be used to develop a blueprint for creating viable market outlets for small fruit and vegetable growers. The document can be used by fresh produce stakeholder groups for market development in any state.

FUNDING: Other CSREES (IFAFS)

KEY THEME - ANIMAL GENOMICS

TITLE: A Novel Strategy for Evaluating Genetic Influences on Resistance to Mastitis in Jersey Cows

ISSUE: Mastitis is an inflammation of the udder affecting a high proportion of dairy cows throughout the world. It is a disease that has been described as the most economically-imposing on dairy producers in the United States, costing an estimated \$2 billion annually. Clonal expansion of a population of Jersey cows previously confirmed either resistant or susceptible to mastitis provides a novel strategy for investigating susceptibility or resistance to disease. Doing so presents a novel approach for providing investigators with a unique set of genetically identical Jersey cows for use in subsequent studies. Initial efforts will prove invaluable for determining factor(s)/genes responsible for disease resistance/susceptibility in mastitis.

WHAT HAS BEEN DONE: To date we have been successful in cloning a Jersey cow uniquely susceptible to mastitis. Eight clones ranging in age of 5-6 months appear to be thriving.

IMPACT: Use of a genetically-identical population of Jersey cows for identification of factors contributing to disease susceptibility or resistance could lead to improved selection strategies and/or novel approaches for eradicating or reducing incidence of mastitis. Tennessee's dairy products account for over 215 million dollars of the state's cash receipts, which is ten percent of the state's total cash receipts. Implementing the results of this research would have a great impact on food quantity and quality by increasing milk production and minimizing use of antibiotics. Minimizing use of antibiotics would serve to reduce antibiotic resistance in human population. Furthermore, this research strategy could result in a very useful model for studying and developing prevention and control strategies for other diseases of significance to the dairy industry.

FUNDING: Hatch Act

#

TITLE: Altering Sex of Resulting Offspring in Farm Animals

Issue: Current methods for predetermining sex of offspring in farm animals are costly, laborious and require a high degree of technical expertise. Such factors continue to limit availability to livestock producers.

What has been done: Our research indicates that sperm may be manipulated to yield more female embryos after fertilization.

Impact: Testing of manipulation procedures that may increase number of female embryos in cattle and swine could improve efficiency of producing replacement heifers or gilts.

Funding: Hatch Act

KEY THEME - FORAGES

TITLE: Agriculture and Natural Resources: Beef and Forages

ISSUE: Forages are an integral part of a total beef operation. In Putnam County, producers have been looking for a solution to the summer decline in quality grazing and hay production. One solution was hybrid Bermuda grass production. This would not only solve the decline in quality grazing forages but may also provide some needed income from additional hay sales.

WHAT HAS BEEN DONE: The Putnam County Ag Agent in partnership with the Area Manage Specialist and the UT Extension Forage Specialist designed and conducted a three day intensive summer forages course. Producers were informed through news articles, flyers and personal letters. Research plots were visited and data was distributed to attending producers.

IMPACT: During the course:

- >21 producers attended all three days
- >17 had no experience in growing summer forages
- >soil testing importance and soil fertility was taught by the agent
- >production and management was conducted by the forage specialists
- >economic aspect was covered by the Manage specialist
- >weed control and a 3 acre demonstration field was exhibited and discussed by Tenn Tech University officials

Evaluation: an end of the course survey revealed:

- >16 producers intend to increase acreage to 15 acres within the next five years
- >100% of the producers found the course very helpful
- > 12 producers intend to use forage testing as a tool to help sell hay excess hay

FUNDING: Extension funding, supplemented by local sponsors and minimal producer fee

#

TITLE: Forage Improvement

ISSUE: In order for producers to remain economically competitive, improved management of their resources is necessary. A recent survey of producers in the county indicated that no producer tested their forage for quality and only 6.25% tested their soils. Comments through needs assessment activities indicated a need for information on weed control, pasture management, nutritional requirements of livestock, pasture renovation, forage testing and soil testing. In 2000, research information indicated that Tennessee producers spent 81.0 million dollars on seed and 168.7 million dollars on fertilizer and lime. Producers can reduce these costs and increase profitability by reducing input costs through soil testing, forage testing and following recommended forage management practices.

WHAT HAS BEEN DONE: Extension Agent, along with Natural Resource and Conservation Service received grant funds totaling \$19,000 to cost-share pasture renovation projects on 10 local farms and to pay the cost of purchasing forage sampling equipment, forage and soil samples of participating farms and to assist in the cost of conducting 2 educational meetings with 38 agricultural producers attending. In addition, agent wrote 4 newsletters covering topics on adding legumes to pasture, nutrient quality of forages, grass tetany, utilizing forage tests as it related to body condition scores and forage mineral concerns.

IMPACT: End of Program Survey of Forage Improvement:

- Participants Ten producers renovated 260 acres of fescue pastures by adding legumes
- Participants fertilized according to UT soil test recommendations.
- All participants plan to continue soil testing on a regular basis.
- All participants believed that the quality of their forage improved
- Participants reduced their fertilizer usage thus saving more than \$1,500 by adding legumes.
- Participants saved \$.54 per 50lb. bag by using fertilizer with no nitrogen.
- Two (2) participants plan on reducing supplemental feeding during the winter thus projecting a savings of \$600.00.

Forage Improvement Meeting Survey (On a scale of 1 to 5 - 5 being highest score)

Usefulness	4.55
Knowledge Gained	4.09
Quality of Presentation	4.45

Comments included:

Excellent Program
Presentation was very informative and well given
Plan to Adopt
Add mineral and legumes
Forage and soil test regularly

FUNDING: Extension

#

TITLE: Decatur County Forage Producers Using Recommended Practices

ISSUE: Through Extension contacts and events, 261 livestock producers are utilizing their 50,000 acres of forages better than ever before, however, more needs to be taught on how to best manage their fescue & warm season grasses. Adding clovers, rotational grazing, forage testing, and using warm season grasses to improve feeding practices are a few areas that Extension is emphasizing.

WHAT HAS BEEN DONE: Over 23 agent days and 666 contacts were involved with educational assistance in forage production practices with 300 county producers in the past year.

- One 9-county forage field day was conducted by Extension with 88 farmers attending
- 2 county field days related to warm season grass production, hay storage & feeding were held by the ag. agent with 78 farmers attending.
- Conducted 6 on-farm demonstrations related to forage renovation
- 8 weed control demo's related to warm season grasses
- 6 demo's related to stockpiling KY31 fescue for winter grazing
- 4 newsletters sent quarterly related to forages
- 84 farm visits in this area
- 3 meetings with 68 producers attending related to weed control, warm season grasses and hay storage
- 72 producers re-seeded 3300 acres of pasture with 50% cost-share assistance through FSA/NRCS with ag. agent's assistance
- 206 producers received drought assistance for their forage production loss through the FSA and Extension agent working together to report estimates
- 2 insect control demo's on warm season grasses

IMPACT: 51 forage producers have increased their yields of forages by 500 lbs. per acre or more by using warm season grasses with their KY31 fescue. They are getting 60 more days of grazing during the summer months, and this has increased calf weaning weights on the average of 40 lbs. per calf or \$32 per head! These 51 producers are using recommended herbicides for weed

control thereby increasing their hay value and yield on Bermudagrass for the horse market. Price on small bales was increased 50¢ on 160-bales-per-acre or \$80 more per acre. 15 are using no-till to plant winter annual grasses in Bermuda for extra grazing or extra cutting in the spring saving \$500 per farm per winter on feed cost. \$500,000 was saved by 72 producers using FSA programs to reseed clovers & grasses in their pasture. 20 farmers estimate their calves are 50 lbs. heavier this year due to the new sowing. 40 of these farmers stockpiled fescue this fall and calves were 80 lbs. heavier at market time this year compared to last year. 206 producers took advantage of the drought program in 2002 and received an average of \$700 from FSA for feed purchase if needed. 15 new hay barns and 14 hay pads were built to store and feed hay in the winter reducing hay losses of \$600 per farmer per year.

FUNDING: Extension

#

TITLE: Carter County forage producers to take advantage of production practices to increase producer returns from pasture and hay production.

ISSUE: Carter County beef, dairy and horse producers utilize approximately 40,000 acres for pasture and hay production. The two major grass forages utilized are orchard grass and fescue.

WHAT HAS BEEN DONE: In February a forage production meeting was conducted for thirty-five horse producers and the forage mailing lists were updated. Special emphasis was given to proper management of fescue and orchardgrass as a forage. Of special concern is hay storage and forage testing.

At two Carter County beef cattle meetings forages were emphasized. Five radio programs stressed forage management and a calendar on beef forage practices was distributed to thirty commercial beef herds.

IMPACT: Following recommendations in the UT Extension publication Weed Control in pasture and hay fields ten producers applied chemicals on one hundred and fifty acres to improve forage stands of orchardgrass and fescue. This should have resulted a dollar increase of \$1,500 dollars on the one hundred fifty acres. Twenty new acres were planted in alfalfa for the horse industry. This would have a dollar impact of \$6,000.00.

Two producers improved their hay storage techniques. The storage areas should hold two hundred 4x5 foot bales weighing approximately 750 lbs. If we figure the bales saving 30% from less spoilage and the cost of \$15.00 a bale the dollar savings would be \$900 per year. Fifteen Carter County beef producers attended Beef Expo in Greeneville.

FUNDING: Carter County Cattlemen's Association and Extension Service.

#

TITLE: Forage Crop Production and Weed Control

ISSUE: Beef farmers sometimes lack high quality, efficiently-produced forages which increase their feed cost. Lack of the control of annual weeds in forage crops many times is the reason for low quality forages.

WHAT HAS BEEN DONE: To gather information about the forage practices of Polk County beef farmers, a survey was administered to 26 farmers in the spring. Fourteen surveys were returned. Eight out of fourteen farmers reported a weed control program. The agent working with the Polk County Livestock Association organized a Forage and Pasture Weed Control short course for beef farmers. U.T. forage specialist Gary Bates, presented an educational program on cool season weed control. The agent helped beef farmers become aware of forage related issues through six bi-monthly newsletters, and six newspaper articles that were submitted to local newspapers. Seven personal visits were made with farmers on the topic of forage weed control. Awareness letters were sent to farmers with information about U.T. Beef and forage field days and other beef and forage related activities.

IMPACT: The forage crop production and weed control program had 1118 contacts during the program year. One hundred twenty-five of the contacts were through group meetings and seven was face to face visits. Twenty-six farmers attended the forage and weed control short course. Eight out of fourteen farmers attending the short course reported an ongoing weed control program. Two farmers working with the extension agent began using U.T. recommended practices to control pasture weeds. One farmer, using chemical control for the first time, reported 90% control of pasture weeds. Three Polk County beef farmers attended the U.T. Beef Field Day and has expressed an interest in chemically controlling pasture weeds next year. One farmer, after attending a U.T. Beef program, expressed interest and became BQA (Beef Quality Assurance) certified.

FUNDING: Extension and Private Contributions

#

TITLE: Forage Production and Management

ISSUE: A survey of county beef producers determined that improving forage quality and production is needed. Producers indicated that pasture management was the number one problem with beef production in Giles County. An advisory committee indicated that improvement of managing pastures was one area that the Giles County Extension Service could address in educational programming. The Lower Middle TN Priority Program Team (LMTPT) determined that forage producers need to improve their management skills through the use of recommended practices.

IMPACT: 23 forage producers participated in a two session LMTPT area forage short course. One session focused on hay management and the other on pasture management. Pre and post test

indicated that producers increased their knowledge of hay production and management by 38%. Pre and post test indicated that participants increased their knowledge of pasture management by 11%. Participants comments from the short course included:

Thanks very much.

This was an excellent course with a great deal of usable, well organized, information.

It richly repaid my effort in coming.

Very useful course - well worth my time.

The third session included the Making Forages Work field day at the MTES in which the LMTPPT assisted in planning. Approximately 200 farmers, agri-businesses and others attended. Participant evaluations indicated that 97% learned something new, 91% plan to make use of information, and 100% felt attending was worth their time. An end-of-program survey for forage short course indicated that 100% of participants responding fertilized/limed based on soil test and used recommended weed control measures. 50% of the participants cut hay at the proper stage, stockpiled fescue and used controlled grazing recommendations. One producer estimated an increase in value of their farming operation of \$750 by implementing these practices. In fall beginner beef college, the agent presented a program on recommended hay harvesting times and soil testing to 40 beef producers. Evaluations indicated that 72% of participants understanding of soil testing prior to the discussion was average, fair or poor and after the discussion 84% indicated their understanding was either good or excellent. Evaluations indicated that 83% of participants understanding of proper hay harvesting prior to the discussion was either average, fair or poor, and after the discussion 95% of participants understanding was either good or excellent with 78% indicating excellent.

As a result of all program emphasis on soil testing, an estimated total of 1055 soil samples were taken on Giles County farms. That is an increase over 2001 by 110%. These 1055 samples represent approximately 10,550 acres. The value per acre of improving fertility using UT recommendations has been calculated @ \$22 per acre. Therefore the value of these 1055 soil samples to Giles County farmers is calculated to be \$232,100. In addition to soil testing, 1185 acres of pasture were improved with the addition of white clover. Using a value of \$11 per acer, the savings on fertilizer cost to these producers is calculated at \$13,035.

FUNDING: Extension funds and registration fees

#

TITLE: Quality Forage Production

ISSUE: As hay equipment gets more expensive and fewer producers own equipment the need for high quality hay on reduced acres increases. Producers like using hybrid bermuda grass for hay and summer grazing as the weather is beter for curing and spring calving cows do beter on the high quality pasture without problems associate with our summer annuals.

WHAT HAS BEEN DONE:

- * Conducted 5 weed control demonstrations using varying rates of herbicide on 4 varieties of bermuda grass.
- * Held bermuda grass tour and field day focusing on weed control, forage testing, hay storage and fertility.
- * Focused on nutrition, use of quality forages, reduced supplemental feeding of horses in one session of horse seminar.
- * Continue area-wide Hay Day which focused this year on bermuda grass.
- * Reported mineral findings from area research at local mineral meeting for beef producers.
- * Continue on-farm visits for management, recommendations on establishment, weed control, insect control, fertility, poisoning issues, forage testing, ration balancing, pasture utilization.
- * Gave presentation to Somerville group on using high quality forages and economics.

IMPACT:

- * 35 producers gained knowledge on using a new herbicide for weed control in bermuda grass.
- * 8 producers changed to a legal herbicide to control weeds on approximately 600 acres.
- * 3 producers went together to test 8 hay cuttings to match hay quality with stage of production.
- * Over 50% of producers (21) said they would change their mineral program after an extension program in the county.
- * Showed 20 producers how to save \$2400 annual feed cost on 100 cow herd by feeding superior hay instead of bought supplements.
- * Henderson County had 92 soil samples taken for pasture and hay land through UT soil testing lab out of 143 total samples run. there were 10 forge samples run not counting 4 mineral assays.

FUNDING: Extension Funding

#

TITLE: Forage Production

ISSUE: In Hardeman County the quantity of our pastures and hay ground is simple, (according to Tennessee Agricultural Statistics we have 12,500 acres of hay) especially since many of our producers have decreased the size of their herd due to the dry weather of 98, 99, and 2000. However, the overall quality is somewhat lacking. Our advisory committee felt that this is due to several reasons; poor management, lack of weed control, overgrazing, not cutting hay at the proper stage, inadequate storage and only a few producers forage testing. Some producers are beginning to realize the benefit of maintaining clovers in their pasture, thus increasing their quality.

WHAT HAS BEEN DONE: The agent has utilized news articles, newsletters and winter meetings to promote forage testing, nitrate testing, pasture renovation, weed control, and forage

and hay production. Demonstrations have included additions of clover or small grain to pasture, forage varieties and Bermudas grass establishment. The agent has assisted in the 9-County Area Beef Meetings, the annual 9-County Hay Day, Bull Evaluation Demonstration and Beef Conferences.

IMPACT: Over 158,468 pounds of seed were sold in the county for establishment and renovation of pastures and hay. We now have over 3,000 acres of Vaughan No. 1 Bermuda. Forage testing has increased over 20% during the past year. The agent has observed an increase of interest in the addition of clover and small grains to pasture as well as pasture renovation and weed control. Closer attention is being paid to the benefits of adequate hay storage. Several county producers have attended 9-County Beef Conferences and Hay Day which the agent assisted with. These provided forage management information as well as equipment demonstrations.

FUNDING: Extension

#

TITLE: Nutritional Strategies to Improve Efficiency of Carbohydrate and Protein Utilization in Beef Cattle

ISSUE: This project is important to both beef cattle producers and the general public. The goals of this project are to improve the efficiency with which cattle utilize nutrients. This will lead to increased economic returns for the industry and also a reduction in waste excreted into the environment.

WHAT HAS BEEN DONE: Growing beef calves were used to evaluate the use of supplemental non-forage fiber on the growth performance of weaned calves in cool season forage based grazing systems. Weaned beef calves were used to compare 2 forage-based finishing systems. Calves were stratified by sex and weight before being randomly allotted to system. Each replicate pasture contained 3 steers and 3 heifers. Each system consisted of fall, winter and spring grazing periods. System 1 (CSP+A) consisted of calves grazing cool season pasture in the fall and spring (0.20-ha/calf) and winter annual pasture (0.20-ha/calf; 3 replications). System 2 (CSP+SH) consisted of calves supplemented with soybean hulls at 1% BW (4 replications) while grazing cool season pasture in the fall and spring (0.20-ha/calf) and stockpiled cool season pasture in the winter (0.40 ha/calf). Each replicate grazed the same pastures in fall and spring, but separate winter pastures. Hay was fed to both systems when adequate pasture was not available. Initial and final weights for each period were the average of two consecutive days weights. Calves were weighed and supplement adjusted at 28-d intervals. After the conclusion of the spring grazing season, calves were harvested and carcass data collected. CSP+SH calves gained faster than CSP+A calves. This resulted in CSP+SH calves being heavier than CSP+A calves at harvest. CSP+SH calves had a larger ribeye area, thicker rib fat, higher yield grade, and higher quality grade than CSP+A calves. The CSP+SH system resulted in greater gains with higher quality carcasses than CSP+A. Summary of additional measures of forage availability,

nutritional quality and botanical compositions are continuing. Slow release boluses were used to estimate total diet intake and an additional marker was used estimate individual supplement intake. A metabolism experiment with six steers in a crossover design was conducted feeding fresh cut tall fescue with or without soybean hull supplementation. This experiment included intake, ruminal metabolism, ruminal digestion, intestinal digestion and total tract digestion measures. Beyond providing additional metabolic information relating to supplementation strategies for fresh forages, it will be used to determine the release rate of intake markers from the slow release boluses under our dietary conditions. The validation of the bolus release rates will allow for estimates of total intake and forage intake to be determined in the grazing experiment.

IMPACT: This research addresses concerns regarding the efficiency of nutrient utilization and nutrient excretion in urine and feces of ruminant livestock consuming forage-based diets. Beef cattle production systems in the Mid-South Region are primarily based on cool-season forages. These forages are unique because they contain more available nitrogen than can be utilized by the ruminal microbes and the animal based on other nutrients available from the forage. Tennessee is the ninth leading beef cattle producer in the United States. Beef cattle production accounts for over one million dollars of the state's cash receipts. Through this work we will develop supplemental nutrient strategies that will optimize the growth efficiency, efficiency of nutrient utilization, nutrient retention and nutrient excretion of ruminant animals consuming forage-based diets. Improving the efficiency with which cattle utilize nutrients will increase economic returns for the industry and reduce waste excreted into the environment.

FUNDING: Hatch Act

KEY THEME - AGRICULTURAL COMPETITIVENESS

TITLE: Farm and Financial Management/Marketing - 2002 Farm Bill and marketing skills.

ISSUE: Two economic concerns face a number of Franklin County farm families for the immediate and long term future. Low grain prices over the past four years have many producers concerned over the current profitability of their farm business and wanting to know how they can stay economically competitive. The second concern involves the 2002 Farm Bill programs. Several new changes in terminology and options to choose from had producers concerned for making the right decisions to maximize benefits and provide the best counter-cyclical protection.

WHAT HAS BEEN DONE: Extension planned and conducted an extensive marketing seminar designed to address key marketing issues in December 2001 to assist producers in developing needed skills for the coming year. Extension also made forty-three marketing-related personal visits with producers. Timely marketing information was incorporated in a monthly newsletter to

each of the 962 farm producers. Extension, also planned and conducted with the USDA Farm Service Agency, seminars, press releases and news letters addressing farmers needs and process for making crucial farm bill program decisions that will effect program benefits for the next six years.

IMPACT: As a results of Extension's efforts the following impact was ascertained through follow-up program survey.

- 18 producers attended the marketing session, based on evaluations, producers rated each of the sessions topics as very helpful.
- Three producers reported utilizing marketing skills to obtain an average marketing price of \$2.90 for approximately 350,000 bushels of corn.
- Eight producers reported they felt more confident in their marketing decisions by utilizing skills
 - to calculate profitable farm prices.
- Eight producers reported having a better understanding of basis, with three producers utilizing basis contracts as a marketing tool for the first time.
- Two producers reported utilizing option strategies as an alternative to building more on-farm storage facilities. One producer reported this saved him in excess \$50,000.
- Fifty-two producers were assisted with individual farm bill program issues.
- According to local FSA director, "Extensions initiatives in assisting with this farm bill has made a tremendous impact on farmers being prepared and knowledgeable about the programs benefits.

This has led Franklin County to having more than fifty percent of farms processed, which is nearly double of surrounding counties and the national average.

FUNDING SOURCE: Extension

#

TITLE: Intensive Farm and Financial Planning with Farm Families

ISSUE: Tennessee agriculture is undergoing significant changes. Farm families are faced with difficult decisions related to alternative enterprises, capital replacement decisions, marketing alternatives, financial strategies, environmental concerns and a variety of other issues. Educational programming assistance is needed to address the likely economic impact of alternative decisions.

WHAT HAS BEEN DONE: Tennessee's MANAGE program was designed to help farm families evaluate alternative ways of organizing and operating the business. MANAGE is a comprehensive farm and financial management educational program. MANAGE evolved from Farm Financial Management Special Projects funded by Congress. During the 1980's these

projects demonstrated the effectiveness of management educational assistance to farm families. The MANAGE program was created in 1986 by the State of Tennessee. Additional funding was provided to employ additional area farm management and state specialists.

Over 10,000 Tennessee farm families have participated in the intensive phase of the MANAGE program. Within the past year, computerized financial planning software has been used around the kitchen table to individually plan with approximately 600 Tennessee farm families. Many farm families are experiencing extremely difficult times. Over the past 12 months, area farm management specialists have worked with over 4,000 additional farmers on partial budgeting decisions.

IMPACT: The following results from surveys of participating farmers indicate their vote of confidence in the MANAGE program:

Ninety-eight percent of the families said the program is useful. Ninety-six percent of the participants stated they would utilize the program again.

Ninety-seven percent of the families stated that resources for Extension financial management educational programs should be increased or maintained.

Ninety-eight percent of the families agreed that Extension financial management educational programs are valuable during non-crisis times.

FUNDING: Extension

#

TITLE: Farm Management in the Cumberland & Smokey Mountain Districts

ISSUE: Tennessee agriculture is undergoing rapid changes. These changes are occurring in the business and financial structure of the industry. Producers are faced with making changes in their production methods, and the way they market their products. Also, government farm program

payments are declining. While these changes may aid the consumer, agricultural producers will face a much more competitive and uncertain financial future. Failing to recognize and manage this change will jeopardize the financial health of many farmers.

Approximately 5,400 farmers in Area Eight of the Cumberland District gross about \$116.4 million and spend about \$84.3 million each year. This represents an approximate net income of \$35.1 million for an ten county area. Cattle, Dairy, Poultry, Vegetables, and Tobacco represent 82% of

that total according to the 1997 Ag Census. These enterprises have seen some tremendous changes in technology, organization, and marketing opportunities in the recent past. These changes, if not managed correctly, will greatly affect producers and in turn affect the agriculture income of that area. In meeting with the eight county Agricultural Agents and discussing there

findings from their own needs assessments, and in conversations with past and present MANAGE

participants it was decided that a comprehensive farm financial program was needed. This program would focus on improving record-keeping, budgeting, marketing, farm financial analysis, and overall profitability of farmers in Area Eight.

WHAT HAS BEEN DONE: Conducted eleven educational meetings with an attendance of 827 producers. Topics covered at said meetings ranged a wide variety of Farm Management topics such as Hay Economics, Record Keeping for Farmers, Alliances, Beef Marketing, and Computer Application in Agriculture.

In addition to the educational meetings, twenty three long run farm plans were estimated and evaluated for 41 producers. These farm plans main agricultural enterprise varied from Beef Cattle to Nursery Stock.

IMPACT: Impacts from the long run farm plans were measured by results from FNLRB analysis and observation of changes made to an operation after the analysis was completed.

The change in the net farm income from alternatives suggested by the producers and the farm management specialist ranged from -\$27,825 to \$76,152

The change in cash flow from alternatives suggested by the producers and the farm management specialist ranged from and -\$27,825 to \$42,695.

50% of the MANAGE participants made a change in their operations as a result of the farm financial analysis.

27% of the MANAGE participants made no changes in their operation as a result of the farm financial analysis.

FUNDING: Extension

#

TITLE: Integrated Resource Management

ISSUE: Beef producers are finding it more difficult to remain competitive in the production of feeder calves. Traditional Extension programs have focused on the promotion of one or two economically important management practices during a specified period of time. Taking a whole farm approach where the best combination of management practices can be implemented will have a greater impact on improving returns from the beef operation.

WHAT HAS BEEN DONE: Fifteen Integrated Resource Management Demonstration farms are

being maintained across Tennessee. Production and financial records are being kept on these farms to use in educational programs. These records have been compiled to determine the range and average costs and production parameters. Extension agents are using these demonstration farms in their educational programs.

IMPACT: Integrated Resource Management (IRM) demonstrations have been conducted in Tennessee since 1992. Results of data collected on fifteen farms showed an improvement in productivity. Results presented are based on the number of years completed in the program rather than calendar years since all farms did not start on the program at the same time. Average weaning weight increased from an average of 482 pounds (15 farms) in Year 1 to 540 pounds (5 farms) in Year 4. Pounds of beef produced per cow increased from 405 (15 farms) in Year 1 to 482 (5 farms) pounds in Year 4. Pounds of beef per acre increased from 119 pounds (15 farms) in Year 1 to 134 pounds (5 farms) in Year 4.

FUNDING: IFAFS (USDA) Smith-Lever

KEY THEME - AGRICULTURAL PROFITABILITY

TITLE: Improving Profitability in Tobacco Production

ISSUE: The production of Dark-Fired and Burley tobaccos has been the main source of total farm revenue for Cheatham County farms for over 100 years and generates in excess of \$5,000,000 annually to the local economy. However, recent quota reductions have forced tobacco growers to look at ways in which they can decrease cost, while at the same time increasing leaf quality and maintaining profitability for their farms to remain viable. Many growers are also considering alternative agricultural enterprises to help compensate for the reduced income from their tobacco operations.

WHAT HAS BEEN DONE: The agent has worked through a team effort with area agents, UT and UK Extension Specialists, UT Experiment Station Staff, tobacco company representatives, and Ag Chemical Companies, to plan and conduct educational programming for local producers. As a result the agent conducted the following educational activities:

Developed timely news articles and newsletters which focused on cutting production costs, new tobacco varieties, disease management, irrigation (to improve yields), marketing, and labor management.

Visited over 40 growers to assist them with tobacco variety, fertility, budgeting, and labor

management issues. Also, the agent utilized Spanish fluency skills to assist growers where communication barriers were affecting labor efficiency with migrant workers.

Assisted 23 growers with insect and disease control problems in the field and utilized the UT Insect/Disease Digital Diagnostics system when necessary.

Secured grant funds from US Smokeless Tobacco Limited Partnership to purchase 16 «Water Mark soil moisture meters and set up 2 soil moisture/irrigation demonstration test plots in each of TennesseeÆs Dark Fired Tobacco growing counties (8 counties, including Cheatham Co). Efforts were coordinated with area Extension Tobacco Priority Team, other area extension agents, US Smokeless Tobacco, and UT Irrigation Specialist (data to be collected and analyzed during the winter).

Set up a Dark Fired tobacco variety test plot with 3 local growers and a Nitrosamine study test plot with 1 local grower (to determine nitrosamine levels at 3 different nitrogen rates, funding provided by Hail & Cotton, Inc). A county field day was conducted to view test plots and share information with local growers (assisted by US Tobacco Co. and Extension Director Paul Hart, Robertson Co.)

Coordinated with Area Tobacco Priority team in planning and conducting winter Tobacco Production Meetings in Cheatham County and 3 other middle TN counties as well.

Assisted area agents, UT Specialists, and UK Specialists with planning, promoting and conducting the TN-KY Tobacco Expo. in Springfield, TN and a Tobacco Production Field at the UT Highland Rim Experiment Station.

6 tobacco farmers were assisted with the implementation or expansion of alternative agricultural enterprises.

Coordinated with UT Irrigation Specialist to develop a publication on using soil moisture sensors to schedule tobacco irrigation.

IMPACT: 10 tobacco growers increased leaf yield by over 200 pounds per acre, which resulted in increased combined revenue of over \$80,000.

7 growers used the UT Tobacco Systems Software for budgeting their 2001 crop.

55 tobacco growers gained knowledge and skills in the safe handling and use of pesticides.

22 growers reduced losses to Black Shank by using recommended practices and improved tobacco varieties, with a loss reduction value of \$75,000.

15 growers reduced losses by other insect and disease problems by over \$40,000 through in field

diagnosis and by using the UT Digital Diagnostics System.

8 growers increased labor efficiency with their Hispanic laborers. Agent assisted 1 grower by teaching laborers how to strip and class Wrapper tobacco, which allowed him to receive an extra \$20,000 for his crop.

32 growers indicated in an end of year survey, that Extension programming efforts had made a combined impact of \$134,000 in their tobacco production operations.

6 tobacco producers sold a combined total of \$ 51,000 in products from alternative agricultural enterprises.

FUNDING SOURCE: Extension Funds, US Smokeless Tobacco Manufacturing Limited Partnership.

#

TITLE: Beef Cattle and Forage Production - Improved Profitability

ISSUE: For Hamblen County Cow-Calf producers to remain economically competitive in the years ahead, improved marketing of feeder cattle is a must. Receiving additional dollars for feeder cattle has been identified as being critical for future success. The use of group marketing, improved feeding (weaning), improved health practices such as vaccinations, internal and external parasite control and proper mineral supplementation have proven to pay off in additional dollars to beef producers.

WHAT HAS BEEN DONE: Six Hamblen County beef producers participated in Tri County Beef University educational program in January, February and March. Participants surveyed ranked the program as very useful and plans are underway for a February/March session in 2003. Graded feeder calf sales to bring additional dollars to producers were held in Greeneville and at Mascot. UT specialist discussed beef cattle health management practices at annual livestock association meeting. Beef and Forage Field Days were held at Knoxville/Alcoa and Greeneville with at least twenty eight Hamblen County producers attending. Agent become certified as a Beef Quality Assurance trainer.

IMPACT: Six participants in Beef University gained knowledge and skills in subject areas covered and according to evaluations planned to use much of the information gained on their own farms.

Participants participating in graded feeder calf sales received an average of a 4 cents per pound premium over calves sold "one head at a time" at traditional auction sales. This is an extra \$20 per head/animal (500 pound animal) that producers receive compared to a traditional sale. At least 100 head were sold from Hamblen County which resulted in an additional \$2,000 in farm

income that would not have otherwise been received.

At least one participant in the health program educational session at the August livestock association meeting learned that her cattle had mineral deficiency problems and changed the mineral mix fed to her cattle as a result of attending the meeting. She is very pleased with the results.

Twenty eight producers attending Beef Field Days gained knowledge and skills in subject matter area covered and according to evaluations planned to use much of the information gained on their own farms.

FUNDING SOURCE: Regular Extension Funds

#

TITLE: Tobacco Production

ISSUE: Improved Tobacco Profitability For East Tennessee Producers

WHAT HAS BEEN DONE: A East Tennessee tobacco enterprise team was formed to develop a program to assist producers to look at ways to cut farm cost, improve yields and to improve farm profits.

IMPACT: BTU 2002 was formed out of the ideas of the Smoky Mountain District Tobacco Enterprise Team in an effort to offer a comprehensive educational program for progressive tobacco producers in East Tennessee who were interested in continuing to make tobacco an integral part of their overall farming operation. Promotional information including applications were prepared and distributed to agriculture extension agents in each of the 24 counties comprising the Smoky Mountain District. Participants were then recruited and their applications reviewed by the team. A total of 32 participants were selected to participate in the program based on their applications. These participants represented approximately 700 acres of burley tobacco production in East Tennessee. The following is a listing of the sessions offered along with the topics covered at each session:

- Eighty (80) percent of the participants responded that they would adopt and/or implement one or more practices covered at the sessions.

- Through multiple toppings, production increased by 300#/acre resulting in \$336,000 of additional income for the producers.

- Twenty-five (25) percent of the participants representing 175 acres of production indicated that they would plant the new variety (KT 200) for black shank resistance in 2002 which according to field trials should yield an additional 200#/acre resulting in \$70,000 of additional income.

- Twenty-five (25) percent of the participants indicated that they would use Terramaster for treatment of pythium root rot. These transplants were valued at \$39,200 to producers.

- Twenty-three and a half (23.5) percent of participants indicated that they planned to use a split application of Ridomil for the control of black shank which should increase their production by 250#/acre that would amount to an additional \$82,250.

- Through the efforts of BTU 2002, there is a potential of increased profits for burley tobacco producers in East Tennessee of over \$500,000.

Funding: Extension Funding

#

TITLE: Beef Profitability

ISSUE: Beef Producers can gain profits and reduce costs by implementing recommended production and marketing practices.

WHAT HAS BEEN DONE: 3 area field days, an area beef college, mass media, and Beef Cattle Calendar. Extension promoted proper forage management practices (fertilize by soil test, establish Bermudagrass, control weeds, stockpile fescue, plant winter/summer annuals, renovate with clovers), beef production (use bulls with superior EPD's, cull nonproductive cows, implant claves, worm, vaccinate), and beef marketing.

-Meetings addressed beef budgeting, hay equipment cost: Beef Cattle firm

-Worked with Beef IRM Farmer to get records submitted.

-Involved 31 producers in Beef IRM Calendar program.

-Mass media and farm visits on benefits using forage and beef practices.

-Visited 5 producers to explain the advantages of marketing cattle in an alliance.

-Assisted with Statewide Forage Field Day, Area Hay Day, Area Bermudagrass Field Day, State Fair Forage Exhibit.

-Assisted with graded feeder calf sale.

-Taught 26 producers advantages and methods of stockpiling fescue at Multi-county Beef College.

IMPACT:

-1976 calves marketed at the graded feeder calf sale returned additional profit of \$42,000.

-Producers saved \$30,000 by discovering three bulls that flunked the

Breeding Soundness Evaluation.

-Total impact to forage producers from following soil test recommendations could be as much as \$107,000 in 2002. 125 producers out of 560 beef farms have a current soil test. Example: one producer saved \$1,000 on his fertilizer bill for 83 acres by using soil test. Over the life of the soil test he will save \$4,000.

FUNDING: Extension funding; County Co-Op; Hardin County Stockyards; Collinwood Hardware.

#

TITLE: Beef Profitability

ISSUE: Beef producers in Perry County manage over 6500 head of beef cattle. Producers have suffered from declining market trends over the past several years. Producers in Perry County fail to carry out recommended management practices because of lack of facilities and expertise to perform practices. The major problem of Perry County producers is a failure to adopt management practices that would improve market weight and quality and lack of high quality forage.

WHAT HAS BEEN DONE: The Perry County Ag Agent utilized the following educational activities to assist producers in improving their management skills:

1. Developed a series of news articles and newsletters focusing on improving management skills.
2. Visited on a regular basis 20 beef cattle producers to discuss their management practices.
3. Conducted four on-farm cattle working demonstrations emphasizing BQA, castrating, implanting, fly control, worming, vaccinating and handling facilities.
4. Worked with six producers to select superior herd sires.
5. Planned and carried out intensive rotational grazing demonstration.
6. Held two beef meetings for producers focusing on management and recordkeeping and backgrounding.

IMPACT: Four on-farm demonstrations of BQA, castrating, implanting, fly control, worming and vaccinating impacted five beef producers owning 240 cows. These producers increased weight of an average of 230 pounds per calf, increasing income approximately \$48,000. Sixty-six acres of Vaughn's Bermudagrass was established on four farms this summer. One hundred acres established in 2000-2001 yielded an average of 8.5 tons of forage per acre. These forages have superior nutritional value and have improved weaning weights and quality of calves sold. Producers submitted 33 soil samples for forage crops and renovated or re-established 350 acres this year. Research shows adding clover increases weaning weight 146 pounds. This represents a \$46,000 increase in income to Perry County producers.

FUNDING SOURCE: Extension funds.

#

TITLE: Beef Profitability

ISSUE: The majority of beef producers in Lewis County are selling their cattle at weekly auction markets. The prices obtained at these markets are low, especially when considering production costs. Consumer demands are also requiring changes in herd health management.

WHAT HAS BEEN DONE: The Lewis County Extension Agent utilized the following educational activities to assist producers in obtaining better return from their cattle:

1. Held a B.Q.A. (Beef Quality Assurance) training meeting.
2. Conducted a farm computer workshop with producers.
3. Held a beef marketing meeting to encourage producers.
4. Familiarized producers with new practices through newsletters, newspaper articles, and radio announcements.

IMPACT: A follow up survey with cattle producers revealed:

- 8 producers adopted new practices as a result of Extension programming.
- 2 producers have begun to use Extension farm management computer software.
- 3 producers indicated a 20 lb. increase in weaning weight as a result of the program.
- 1 producer showed an increase in hay production as a result of the beef profitability program.
- 1 producer has begun to regularly test forages.

FUNDING: Extension Funds

#

TITLE: Forest Landowner Education Extension Initiative (FLEEI)

ISSUE: FLEEI focuses on educational programs and resource demonstrations for the over 400,000 non-industrial private forest landowners who own over 80 percent or 11 million acres of forest land in Tennessee. The objective is for landowners to improve the profitability of forest ownership, improve management of the forest resource and understand the ecology of forest development and succession (forest biology).

WHAT HAS BEEN DONE: A four-year plan of work has been formulated and implemented. Mechanisms to achieve objectives include a curriculum-based program of forest and wildlife short courses for enhanced education of landowners, formation of county forestry association for landowners, demonstration of forest practices on state forests, experiment stations and forest industry lands. A series of forest practices demonstrations were initiated at two locations in 2002, the Forest*A*Syst program manual was published with inservice training for the program and county forestry brochures with current county resource information were formulated and

distributed.

IMPACT: For calendar year 2002

- π Master Tree Farmer 2002 satellite forest land owner short course
- π 21 county forestry associations established, project 8 to 10 more counties per year
- π Work plan developed for demonstration areas for forest practices
- π Inservice training on reforestation after southern pine beetle.
- π Plans in place for inservice training on economic feasibility and investment of forest practices
- π Forest*A*Syst program for landowners initiated
- π County Forestry Brochures printed and distributed
- π Southern Pine Beetle Initiative Website established
(<http://fwf.ag.utk.edu/sites/spb/pine2/pine.htm>)
- π FWF Extension website established

FUNDING: Extension

#

TITLE: Vegetables Profitability-resistant Varieties

ISSUE: In the year 2000 Bledsoe County tomato producers experienced substantial losses due to the race III Fusarium Wilt.

WHAT HAS BEEN DONE: In the Summer of 2001 Dr. Steve Bost and Myself planted test plots in a severely infected field using several resistant varieties along with standard varieties as checks. All plots were weighed and evaluated as to yield and fruit quality. Dr. Bost, along with the demonstrator presented this material at the 2002 Bledsoe/Rhea County Fruit and Vegetable meeting held in January.

IMPACT: This summer every grower I visited had some Sunguards or Florina which were the two most resistant varieties in the demonstration. I was on a total of 10 different growers farms. Based on this observation and a survey of growers attending the Bledsoe-Rhea Vegetable meeting the figures indicated that about 70 percent of the growers tried at least one race III resistant varieties.

FUNDING SOURCE: Extension Funds.

#

TITLE: Impact of Sow Longevity on The Profitability of Commercial Breed-to-Wean Swine

Operations

ISSUE: Tennessee and U.S. swine producers are continuing to tighten their financial belts because of decreasing profit margins. One area that stands out and could use improvement in most swine operations is the combined mortality and replacement rates. However, commercial producers really had no way of determining how long a sow must stay in the herd before she pays for herself. This is particularly critical in breed-to-wean operations because these types of operations cannot capture all of the profits that a farrow-to-finish operation can. The profits or potential profits must be shared between the breed-to-wean operation, nursery facility, and growing-finishing operator in order for the system to survive in the long term. This means it is even more critical for sows in a breed-to-wean operation to remain in the breeding herd long enough to pay for herself. Producers need an easy method at arriving at this value.

WHAT HAS BEEN DONE: Tennessee Extension Swine Specialist cooperated with Extension Agricultural Economics Specialists from the University of Georgia to develop an easy to use spreadsheet that can be used by breed-to-wean producers to determine how long a sow must stay in the breeding herd to pay for herself. This spreadsheet has been posted for use on our Extension Animal Science home page and results looking at average production and expense values have been published in the Journal of Swine Health and Production. Additionally, a popular press article on the subject has been written. This has generated several calls for producers, researchers and others interested in the tool. To date the spreadsheet is being utilized in at least 6 foreign countries and every major U.S. seedstock supplier and several integrators have requested a copy for their use.

IMPACT: Efforts have generated several calls from producers, researchers and others interested in the tool. To date the spreadsheet is being utilized in at least 6 foreign countries and every major U.S. seedstock supplier and several integrators have requested a copy for their use. In a simulated study, improving the parity in which a sow is removed from the herd by 1 would increase the net present value of a single sow by approximately \$70. In a typical 2500 sow breed-to-wean unit, the improvement would mean an extra \$175,000 annually. It has the potential to mean an annual income increase of \$600,000 in Tennessee alone and several million dollars in the U.S.

FUNDING: 1890 Extension and 1890 Institution Capacity Building Grants

KEY THEME - ADDING VALUE TO NEW AND OLD AGRICULTURAL PRODUCTS

TITLE: Value Added Beef Production in Cheatham Co.

ISSUE: The number of beef cattle has increased over the last several years in Cheatham Co.

Much of this increase has been due to loss of tobacco quota, which in turn has lowered overall farm income for local producers. With limited land resources for herd expansion, producers are being forced to increase the quality, value, and profitability of the feeder cattle which they produce. This has placed a great need on the producers part, to improve their beef/forage and marketing/management skills.

WHAT HAS BEEN DONE: The Cheatham Co. Ag Agent has utilized the following educational activities to help meet this need for local beef producers:

1. Developed timely newsletters and news articles focusing on recommended Beef/Forage management practices.
2. Organized a core beef cattle marketing group which consists of 25 local producers (including officers of the Cheatham County Cattlemen's Association) to meet monthly, with the purpose of discussing and planning alternative added value marketing opportunities.
3. Collaborated with area extension agents in conducting a 4 night Beef School, collecting feeder calf weaning weight data, conducting a Beef/Forage field day at the UT Highland Rim Experiment Station, the UT Ultimate Replacement Heifer Sale, and soil/forage mineral testing (on 5 different farms). Also, collaborated with area extension agents and local livestock auction markets in setting up Pre-conditioned feeder cattle sales.
4. Visited 24 producers on a regular basis (plus numerous other producers throughout the year) to discuss forage production and genetic improvements in their herd.
5. Assisted 10 producers with purchasing herd sires with EPDs and replacement females that were matched to the needs of each individual herd.
6. Assisted 4 purebred producers with setting up and carrying out marketing plans to sell herd sires and commercial replacement females.
7. Worked (throughout the year) with the ongoing UT Integrated Resource Management Demonstration farm producer and the UT FIRM Beef Cattle Computer program demonstration farm to utilize their overall improvements as a teaching tool for other beef cattle operators.
8. Assisted 14 local producers with collecting and analyzing feeder calf weaning weights for making management/marketing decisions.

IMPACT:

ù 28 producers made improvements to their forage production for the cow/calf herd by overseeding with clover and lespedeza in the spring to improve calf weaning weights and with stockpiled fescue and small grains to lower winter feed costs.

- ù 9 producers increased calf weaning weights by 20 pounds or more.
- ù 4 producers implemented watering systems to improve rotational grazing on 130 acres of pasture.
- ù 10 purchased herd sires with EPDs and quality replacement females to improve herd genetics and feeder calf weaning weights.
- ù 3 producers sold 20 beef replacement heifers for \$18,000.
- ù 14 producers sold \$184,000.00 (396 head) of feeder cattle through Pre-conditioned feeder cattle sales or through other added value marketing opportunities. These same producers added an extra \$24.00 per head average, through a 45-day pre-conditioning program and an extra \$25.00 per head through "added value" marketing techniques.
- ù 41 producers who attended the UT Area Beef School indicated in the end-of-program survey, a total impact of \$483,171.81 on their farms by following UTAES recommended forage and herd management practices.

FUNDING SOURCE: Extension Funds

#

TITLE: Center for Profitable Agriculture

ISSUE: To assist farmers and others interested in starting food processing operations in Tennessee.

WHAT HAS BEEN DONE: Participated in the Ag-Tag Kitchen Project to develop a handbook for groups starting community kitchen-type and small food processing establishments (Dalton, A., M. Davidson, G. Grandle, R. Holland, S. Hubbs and B. Morris. 2002. Adding Value to Tennessee Agriculture Through Commercial Food-Processing Enterprises. Tennessee Agricultural Extension Publication PB 1710. 57 p.). It contains much of the basic information on what is necessary to start a community or individual food processing facility. In addition, many of the regulations or regulation sources are outlined. Assisted the Center for Profitable Agriculture by visiting farmers interested in starting on-farm dairy processing operations. Assisted in development of a report for one of the farmers.

IMPACT: Those persons interested in starting a value-added food processing operation in Tennessee now have more complete information in a single source to assist them in making their decision. This could impact the economy by saving taxpayer dollars either because they are more informed as they proceed with their enterprise or they decide it is not a good idea to proceed

because the enterprise may not succeed.

FUNDING: Agricultural Extension Service Center for Profitable Agriculture

#

TITLE: Assistance to the Wine Industry

ISSUE: The wine industry is one of the fastest growing value-added agricultural industries in the state. Technical assistance is needed for its continued growth.

WHAT HAS BEEN DONE: The wine industry has grown to twenty-seven commercial wineries as of this date and the combined sales at the retail level now exceed \$10,000,000 per year. I have consulted with many of these wineries before start-up and after, working on a variety of technical problems. I actively participate as a speaker in their annual meeting; serve as an advisor for the Tennessee Farm Winery Association and the Tennessee Viticulture and Onological Society. This year I coordinated the wine judging competition for the commercial wineries of Tennessee and eleven other southeastern states. The competition was renamed Wines of The South. The competition had one hundred and seventy five wines entered from twenty-seven wineries and eight states. An Agricultural Extension publication was published: Starting Your Own Wine Business, PB 1688, 2002. This answers many questions on how to proceed through much of the governmental regulations and "red-tape" and other technical questions.

IMPACT: The impact of this is that I am supporting a \$10,000,000 agriculture value added business that is adding significantly to the state taxes and over all economy. In addition, I am providing a marketing tool for wineries in the southeast region which are all adding value to an agricultural commodity

FUNDING: Agricultural Extension Service and Fee based program (Wines of the South competition)

#

TITLE: Tennessee AgrAbility Project

ISSUE: Farmers with disabilities often do not receive the information and assistance needed to return to work. This gap in services is the result of being unfamiliar with the availability of services, lack of services in rural communities, and rehabilitation specialistsÆ lack of familiarity with issues related to agricultural production. As a result of the disabilities, farm families experience loss of income and independence.

WHAT HAS BEEN DONE: The Tennessee AgrAbility Project, a collaborative program of the University of Tennessee Agricultural Extension Service, Tennessee State University Cooperative

Extension Program, Easter Seals, and the Tennessee Technology Access Project, assisted more than 65 new farmer clients during 2002. AgrAbility has assisted 32 clients in obtaining assistance from applicable agencies and organizations. Extension provided assistance modifications that included tractor controls, improved steps for accessing machinery operators' stations, accessibility improvements for farm structures, and other assistive technologies. Extension county agents and specialists also provided assistance in planning and implementing alternative production practices better suited to the individuals' expertise, physical abilities, and marketing opportunities. The AgrAbility Project has participated in 18 local, state, and national field days or farm shows. A new display of tractor controls modifications was developed and presented at several functions, including the Milan Field Day, Sunbelt Expo, and National AgrAbility Workshop. AgrAbility Project staff has presented information to approximately 500 agricultural and rural professionals, plus approximately 700 healthcare professionals, through a variety of meetings and workshops. The AgrAbility Project website has recorded more than 13,000 file requests in 2002. The AgrAbility Project has a new URL registered as tnagrability.org.

IMPACT: Several Tennessee producers have installed machinery modifications, including improved access steps, hand clutch levers, and power assist devices to permit safe and efficient machinery operation. Another producer, a paraplegic, has begun a small fruits operation that offers higher profitability potential than small grains and that can be managed using available machinery and labor resources with the goal of establishing a winery for value added production.

FUNDING: USDA Agreement No. 2001-41590-01135

#

TITLE: Economic Feasibility of Biodiesel Production in West Tennessee

ISSUE: Currently, interest in decreasing dependence on foreign oil is expanding. One potential means is through the use of biodiesel or biodiesel blends. Biodiesel can be made from a variety of feedstocks, including soybean oil. Biodiesel production could provide a means for soybean growers to add value to their product.

WHAT HAS BEEN DONE: A market and financial feasibility analysis of biodiesel production has been conducted. A written report of the market feasibility and a financial feasibility analysis spreadsheet were included.

IMPACT: Research showed that biodiesel production in Tennessee is economically feasible, with locations in West Tennessee along the Mississippi River being preferable for an integrated crushing and biodiesel facility, while a stand-alone plant (soybean oil to biodiesel) could be located in southeast Tennessee. Information from the study is being used by Tennessee soybean producers in evaluating investment in a biodiesel facility and also by state agencies in potential recruitment of biodiesel facilities. Soybeans make up over 35 million dollars of Tennessee's state cash receipts. Further research will examine potential for establishing the facility as a

cooperative.

FUNDING: Hatch Act and Commodity (Tennessee Soybean Promotion Board, Tennessee Farm Bureau) and State (Tennessee Department of Agriculture) and Other (USDA/Rural Development, Tennessee Valley Authority)

#

TITLE: Tennessee Agricultural Experiment Station's New Soybean Variety '5601T' is Best Yielder in Three State Variety Tests

ISSUE: Soybean is a major agricultural crop with diverse human and animal nutritional uses as well as versatile industrial product uses. The availability of a new higher yielding soybean variety will positively impact farmers, processors, and consumers.

WHAT HAS BEEN DONE: The Tennessee Agricultural Experiment Station tested its newly released soybean variety, 5601T, in the Tennessee State Variety Test in 2002 where it tied for #1 in seed yield production (50 Bu/A) among all commercially available conventional maturity group V soybean entries evaluated. 5601T also ranked #1 for seed yield in the 2002 Kentucky State Variety Test and in the 2002 Arkansas State Variety Test. This new soybean variety has broad adaptation to millions of acres of soybean producing areas throughout the Mid-South and Southeast USA.

IMPACT: Farmers faced with low commodity prices need to effectively manage their farm budget. Choice of variety is an important farming decision, which impacts the bottom line. Having a new *high yielding* maturity group 5.6 conventional variety, 5601T, that is well-adapted over a broad geographic region of the *Mid-South* and *Southeast* USA, provides a new opportunity to maintain or increase farm income from soybean production. 5601T is currently being considered to become the new USDA check variety for its maturity group, to serve as a milestone gauge of performance for soybean breeders.

5601T produces superior seed yield. The seed quality is excellent, with its characteristic light hilum and above average seed protein content. This new variety could capture premiums in the non-GMO market, potentially appealing to soyfoods *processors* who desire large volumes of reliable sources of soy protein to meet consumer demands.

In addition to its high yield, 5601T is resistant to stem canker, resistant to soybean mosaic virus, and moderately resistant to southern root-knot nematode. It would be an excellent parent for *soybean breeders* to utilize in crossing programs to complement with additional traits for further genetic improvement.

FUNDING: Hatch Act and Commodity (Tennessee Soybean Promotion Board)

#

TITLE: Tennessee Agricultural Experiment Station Releases New Soybean Variety ‘5002T’

ISSUE: Soybean is a major agricultural crop with diverse human and animal nutritional uses as well as versatile industrial product uses. The availability of a new higher yielding soybean variety will positively impact farmers, processors, and consumers.

WHAT HAS BEEN DONE: The Tennessee Agricultural Experiment Station has released a new soybean variety, **5002T**, in 2002. It was tested in the Tennessee State Variety Test in 2002 where it tied for #2 in seed yield production (49 Bu/A) among all commercially available conventional maturity group V soybean entries evaluated. 5002T ranked #1 for seed yield in the 2001 USDA Southern Uniform Tests. This new soybean variety has broad adaptation to millions of acres of soybean producing areas throughout the Mid-South and Southeast USA.

IMPACT: Farmers faced with low commodity prices need to effectively manage their farm budget. Choice of variety is an important farming decision, which impacts the bottom line. Having a new *high yielding* maturity group 5.0 conventional variety, **5002T**, that is well-adapted over a broad geographic region of the *Mid-South* and *Southeast* USA, provides a new opportunity to maintain or increase farm income from soybean production.

In addition to its high yield, **5002T** is resistant to stem canker, resistant to frogeye leaf spot, and resistant to sudden death syndrome. It would be an excellent parent for *soybean breeders* to utilize in crossing programs to complement with additional traits for further genetic improvement.

FUNDING: Hatch Act and Commodity (Tennessee Soybean Promotion Board)

KEY THEME - ORNAMENTAL/GREEN AGRICULTURE

TITLE: Horticulture Professionals

ISSUE: Timely, practical information is essential for horticulture professionals in landscape, grounds and turf, sales, planning, installation, and maintenance, to maintain quality and increase income.

WHAT WAS DONE:

*Networked with Area Specialists and professionals to conduct a February two-day Grounds Management Short Course, partnering with local industry and area providers of equipment, supplies and services, to plan, and conduct a trade show to foster their involvement and to further educate attendees.

*Cooperated with the Area Ornamental Specialist to offer a winter greenhouse growers meeting on February 6, primarily to give area growers an update by Entomology and Plant Pathology Specialists of the latest pest control management practices.

* Through a variety of teaching methods and with specialist assistance, helped more than 12 growers to utilize information and diagnostic and/or other assistance to increase production of quality fruits and vegetables. Attendance at two on-farm demonstrations was 52.

*Via telephone and other personal contacts, interacted with clientele in followup educational, diagnostic and related efforts prompted by Extension programs, and primarily initiated by both non-commercial and professional horticulture expending more than 190 days. Within this context, was an educational resource for pest and soil problems and a link to UT Agricultural Extension Service soil and pest laboratories and specialists for all appropriate clientele.

IMPACT:

*More than 250 professionals (landscape designers, installers, maintenance, sales and/or service pros, and growers) improved their skills and knowledge, and acquired points toward maintaining certification, pesticide application, Nursery Professional, and/or arboriculturist. Certification is a requirement of most of the professionals, particularly those in grounds mgt.; thus, it is necessary for a sizable percentage of their profits, and of the jobs they provide

*Information (selection and utilization of plants, pest control and safe, effective pesticide utilization, and improved cultural methods) acquired by landscape professionals participating in Extension educational events and Extension contacts (by agents, specialists and laboratory results) significantly reduced the losses caused by failed plantings in Knox County.

*Since many participants are in positions (sales and service) where they regularly pass on information to their professional or nonprofessional clientele, Extension efforts are multiplied many times, easily resulting in savings to individuals and the community tens, perhaps hundreds of thousands of dollars.

*Though very difficult to measure, residents and visitors' quality of life are enhanced by the increased beauty and function of landscapes in the area.

FUNDING: Extension Funds, Short Course Fees

#

TITLE: Horticulture Education for Greens Industry Professionals

ISSUE: The Green Industry is one of the fastest growing areas of U.S. agriculture. Expenditures of plants and plant-related materials in Hamilton County exceeded 26 million dollars in 1997. Local educational opportunities concerning horticultural information for Green Industry personnel are limited.

WHAT HAS BEEN DONE: The University of Tennessee Agricultural Extension Service-Hamilton County partnered with the Chattanooga Association of Landscape Professionals (C.A.L.P.) to design a two-day seminar for Green Industry professionals. Topics concentrated on ornamental horticulture, maintenance, and business management.

IMPACT: Nearly 100 participants from 3 states attended a two-day seminar in July, 2002. Fourteen lectures, including topics on pest management, marketing, tree care, and new plants, were taught during the program. Participants in the program were asked to rate each topic and indicate if they will adopt or utilize the information. 100% of the participants indicated they would utilize information taught during the landscape design lecture and 81.8% indicate they would use information from a lecture on plant diseases. Overall, a mean of 71% indicated they would adopt information taught during the two-day lecture. The utilization of this information in local businesses should provide a greater knowledge base to individuals seeking horticultural information.

FUNDING SOURCE: Extension Funds Other (Seminar registration fees, donations from local businesses)

#

TITLE: Horticultural Business Information Network

ISSUE: Information resource for horticultural clientele in Tennessee.

WHAT HAS BEEN DONE: The horticultural industry in Tennessee is one of the largest and most diverse agricultural sectors in the state. A new Extension website provides information to firms ranging from farm-level businesses growing fruits, vegetables, nursery and greenhouse crops to post farm-gate businesses, such as landscape contractors and retail garden centers. Dr. Charles Hall, Professor and Extension Specialist in the Department of Agricultural Economics at UT, developed this website, called the Horticultural Business Information Network, as part of his statewide Extension program in horticultural marketing and management. Dr. Hall, on the UTIA faculty since March, is developing an Extension educational program that emphasizes all aspects of strategic management; not only covering the intricate aspects of marketing, but also incorporating principles of finance, personnel management, cost accounting and managerial economics. This is reflected in his new website, containing the latest, most up-to-date information that will enable managers to make more informed decisions affecting the profitability of their respective horticultural enterprises. To visit the Horticultural Business Information Network, go to www.utextension.utk.edu/hbin, or follow the links for the Crops/Nursery section on the main Extension homepage.

IMPACT: To date, HBIN receives between 2,500 and 3,000 user sessions each month from clientele accessing and downloading subject matter content.

FUNDING: Extension

#

TITLE: Economic Impact of the Green Industry in Tennessee

ISSUE: Limited information is available regarding the valuable economic contributions made by the green industry in Tennessee.

WHAT HAS BEEN DONE: The horticultural industry in Tennessee is one of the largest and most diverse agricultural sectors in the state. A new Extension website provides information to firms ranging from farm-level businesses growing fruits, vegetables, nursery and greenhouse crops to post farm-gate businesses, such as landscape contractors and retail garden centers. Dr. Charles Hall, Professor and Extension Specialist in the Department of Agricultural Economics at UT, developed this website, called the Horticultural Business Information Network, as part of his statewide Extension program in horticultural marketing and management. Dr. Hall, on the UTIA faculty since March, is developing an Extension educational program that emphasizes all aspects of strategic management; not only covering the intricate aspects of marketing, but also incorporating principles of finance, personnel management, cost accounting and managerial economics. This is reflected in his new website, containing the latest, most up-to-date information that will enable managers to make more informed decisions affecting the profitability of their respective horticultural enterprises. To visit the Horticultural Business Information Network, go to www.utextension.utk.edu/hbin, or follow the links for the Crops/Nursery section on the main Extension homepage.

IMPACT: To date, the Tennessee Nursery and Landscape Association has used the economic impact study to promote the industry to key policymakers. The information has also been distributed to industry leaders and academicians.

FUNDING: Extension

#

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incorporating principles of finance, personnel management, cost accounting and managerial economics. This is reflected in his new website, containing the latest, most up-to-date information that will enable managers to make more informed decisions affecting the profitability of their respective horticultural enterprises. To visit the Horticultural Business Information Network, go to www.utextension.utk.edu/hbin, or follow the links for the Crops/Nursery section on the main Extension homepage.

IMPACT: To date, HBIN receives between 2,500 and 3,000 user sessions each month from clientele accessing and downloading subject matter content.

FUNDING: Extension

KEY THEME - ANIMAL PRODUCTION EFFICIENCY

TITLE: Beef Production

ISSUE: Hamilton county has approximately 10,000 head of cattle. The vast majority of these are in small (<100 head) herds. Most cattle producers are either retired non-farm workers or are part-time farmers. There is a need for continued emphasis on total beef cattle production but especially forage production.

WHAT HAS BEEN DONE: During 2002, 85 area beef producers attended 2 programs presented by Extension that covered the following topics: soil fertility, variety selection, weed control and hay storage.

IMPACT: Utilizing a 5 point Likert scale to identify impact and KASA level changes in program participants, the following impacts were identified:

Question/Statement	Pre-test	Post-test
Understanding of the importance of soil sampling	3.4	4.4
Understand how to take a soil sample	4.1	4.8
How to read a soil sample	3.8	4.6
Value of forage sampling	2.9	4.1
Identification of common pasture weeds	3.1	4.8
How to read a forage analysis	3.1	4.2
Proper timing of forage harvest	3.4	4.6
Intention to utilize a forage sample/analysis	2.4	4.2

FUNDING: Extension

#

TITLE: Agricultural and Natural Resources: Livestock Production

ISSUE: Over the past decade, Shelby County livestock owners have expressed an increased concern for livestock management practices in and around Shelby County. In the area of horse production, The Memphis Convention Center and Visitors Bureau reports that Shelby County has more horses per capita than any other county in the United States. Industry reports agree that the Memphis metropolitan area is the home for over 30,000 head of horses. With the high number of horses, horse production questions occur frequently at the Shelby County Extension Office. Surveys conducted at meetings indicate that many producers showed interest in recommended horse management practices. The producers at these meetings have a positive attitude toward improved efforts in these recommended areas.

In Shelby County, I have over 1000 horse producers on file. There are many I have still not come in contact with but add more to this list throughout the year. Data from surveys, one on one contacts, and other needs assessment techniques indicate that there are numerous horse management issues which could be addressed in Shelby County and could help build awareness, increase knowledge, and encourage producers toward solving their own problems.

In the area of beef production, Shelby County beef producers have expressed concern to a lesser extent in beef management practices in and around Shelby County. Tennessee Agricultural Statistics reports that Shelby County has 9,000 head of cattle and calves. This ranks Shelby County 77th in the state. This county has declined in the number of cattle and calves over the last few years due to increased profitability and increasing urbanization. This may cause the number to decline even more in the future. This decline will have negative effects on the economy. At the beef advisory committee meeting producers showed interest in recommended beef management practices and have a positive attitude toward improved efforts in these recommended areas.

In Shelby County, there are over 250 beef producers that I have on file. Data from surveys, one on one contacts and other needs assessment techniques indicate there are beef management practices that could be implemented in Shelby County that will help build awareness, increase knowledge, and encourage beef producers toward solving beef management problems.

WHAT HAS BEEN DONE: In the area of horse production, one (1) winter meeting and four (4) spring meetings were conducted with emphases being placed on fencing and facilities; medical emergencies; locating, buying, and breaking horses and supplements for the horse; and parasite prevention in horses. Over 350 producers attended the meetings. Many letters, farm visits and telephone calls were also conducted to educate producers on other recommended management practices.

In the area of beef production, one (1) tri-county meeting was held with emphasis being placed on forage and beef management production practices. Over fifty (50) producers were in attendance. Many letters, farm visits, and telephone calls were also used to educate producers on forage and beef production.

IMPACT: Livestock producers were aware of issues such as the West Nile Virus (WNV) and the effects to selected species. They were also informed on the current situations in regard to weed control, forage quality, and correct forage species selection.

* 100 percent of the beef surveys received indicated good/excellent when asked their overall impression.

* In the horse program, 100 percent of the surveys received rated the programs good/excellent.

* One participant said that the horse lectures were great and to please do more.

* One participant said that I did an excellent job, they really enjoyed the program and they would tell others about it.

Since the start of this program I have been surprised at the number of livestock and the interest that has been generated. Producers have adopted recommended research based information in many areas. Based upon the successful programs in the past and an overwhelming positive response to the educational material given, more will be conducted in the future.

FUNDING: Extension

#

TITLE: Beef Cattle Production

ISSUE: Only a small percentage of the 1,175 beef producers in Rutherford County are full-time farmers. Most are business professionals with an average herd of 31.5 head (17 brood cows and 14.5 calves). Our producers are adversely impacted because of their failure to use recommended management practices. They receive less profit than is feasible given their resource base, they receive no profit (merely breaking even) from their operation, or they experience a loss on their investment. Increasing the knowledge and skill level of producers should result in improved herd performance, increased profits and better utilization of resources for a more competitive edge.

WHAT HAS BEEN DONE:

1. Planned, conducted and evaluated a Multi-County Beef Quality Assurance Workshop.
2. Planned and conducted a meeting to inform producers about current health issues including Foot and Mouth Disease, Anthrax, and Mad Cow Disease.
3. Planned, conducted and evaluated a FIRM Workshop.
4. Acquired a long-term agreement to utilize a producer farm as a demonstration site for developing forage practice recommendations.
5. Planned and conducted a Multi-County Forage Field Day.

6. Worked with Rutherford County Cattlemen's Association to facilitate increased membership and greater participation by members in association activities. Developed quarterly News Letter to inform members about current issues and encouraged acceptance/promotion of The Tennessee Beef Cattle Improvement Initiative.
7. Identified minority producers and encouraged program participation through phone calls, letters, visits, and store flyers.
8. Continued Base Program efforts to assist producers in improving herd performance.

IMPACT:

1. Beef Quality Assurance Training helped to increase the knowledge, skills and economic potential of fifty-three producers.
2. Twenty-four producers attending Beef Cattle Disease Training understand the need for a strong herd health program.
3. Interest in Beef Cattle Record Keeping increased by 91.4% among those attending the FIRM Workshop.
4. Hard data supports a \$1,200 annual increase in the net return of our IRM Demonstrator.
5. Forage practice recommendations are being developed on a demonstration farm site. Forty-nine producers participated in Field Day activities which showed how they could incorporate forage planning as a component of their beef operation; five have adopted a "Total Systems Approach" relative to the establishment, maintenance and utilization of their forage program.
6. Twelve producers incorporated forage testing as well as use of recommended management practices as a component of their beef operation.
7. One hundred eighteen individuals have joined the local cattlemen's association and/or participated in activities planned for the membership.

FUNDING: Extension, Rutherford County, Middle Tennessee Angus, and Tennessee Cattlemen's Association. Local farm supply outlets, industry representatives and commodity outlets. Also, NRCS.

#

TITLE: 2002 BEEF PROFITABILITY

ISSUE: Jackson County's total value of agricultural products sold in 1997 was 5.083 million dollars. The sale of cattle and calves contributed 2.536 million dollars or 50% of the total Agricultural products sold (1997 Census of Agriculture). In a 1998 survey of beef producers in the county, 32% overseeded their pastures with clover and 40% routinely removed the breeding bull to establish a controlled calving season. A producer survey conducted in 2001 verified agents observations concerning an increase in the number of producers using some type of weather protection for hay. 66% of the producers surveyed stored part or all of their hay in a barn. No producers conducted a forage test in 2001. In a telephone interview of producers who had attended a beef marketing program, 20% had marketed these cattle differently than through a local feeder calf sale. An agricultural advisory group identified basic management, herd health

and marketing problems as obstacles to profitable beef production. Personal contacts with key agricultural leaders, producers/producer groups and agent observations suggested a need for educational programs focused on improving quality through management and price through marketing alternatives and options for beef producers. Based on these recommendations Beef profitability will be a priority program for Jackson County.

WHAT HAS BEEN DONE: A four night series of educational meetings that focused on a systems approach to profitable beef production. Topics covered were: Pasture Weed Control, Forage Production, Reproduction, and Marketing. A Forage Quality demonstration was conducted with 4 producers District Forage Field Day was promoted. 5 News articles/newsletters were written related to beef and forages Participation in the state wide Forage Mineral Research project by 2 producers. Agent attended monthly County Cattleman's Association Board meetings. Agent attended monthly Farm Bureau Board meetings. 11 producers received coupons for one free forage sample test. 20 farm visits related to beef production were made.

IMPACT: 11 producers gained knowledge and a better understanding of the benefits of rotational grazing. 11 producers indicated that, as a result of the forage program they were going to make a change or try something different related to forage production. 3 producers plan to implement rotational grazing as part of their forage program. 3 producers plan to pay closer attention to grazing patterns in pasture. 10 producers were able to identify a larger number of common pasture weeds. 10 producers were able to better identify weeds poisonous to livestock. 11 producers gained knowledge and felt more confident knowing the appropriate herbicide product to use at the proper rate for weed problems in their pastures. Records obtained from the UT soil lab indicated 18 soil tests were conducted related to forages. Following soil test recommendations can result in high, economical crop yields while focusing on environmentally sound conservation practices. 2 producers plan to over seed 1220 acres with a legume this spring. 9 producers plan to reseed 155 acres of fescue this spring. 9 producers indicated that as a result of the program on reproduction they have a better understanding of the important role nutrition plays in reproductive efficiency. 9 producers gained a better understanding of the purpose of Breeding Soundness Exams in bulls. 9 producers plan to use body condition scoring as a tool in herd management practices. 9 producers indicated they would be willing to work with other local producers to combine and create uniform groups of cattle that could be marketed through an alliance. 10 producers gained a better understanding of beef marketing alliances. 10 producers indicated that as a result of the program on marketing, they would consider marketing cattle through an alliance. 4 producers conducted 7 forage samples to determine forage quality. 2 producers participated in the state wide forage mineral survey. 2 producers were certified BQA

FUNDING: Extension

#

TITLE: Beef Production:

ISSUE: Cattle producers are often reluctant to adopt newer technology and change production systems. Educational programs for producers have been developed on local needs as different situations impacted producers.

WHAT WAS DONE: The need for a comprehensive, educational program was identified and a series of field days were developed. The field days were a cooperative effort between the Knoxville Experiment Station and the Smoky Mountain District Extension. A planning committee comprised of Extension Agents from the Lower East Tennessee Counties and University of Tennessee Specialists have conducted Five Field Days. These Field Days have attracted an average of 350 beef producers. Producers were introduced to "cutting edge technology" that would increase the value of their product.

IMPACT: One hundred and thirty producers completed and turned in evaluation forms. The results were as follows:

100% of those surveyed said they learned something new at the field day.

100% said they would make use of information learned.

100% said events such as the district field day were a good use of taxpayers dollars.

100% said agricultural research and extension are important to the well-being of people in Tennessee.

100% said attending the field day was a good use of their time.

Funding Source: Extension, G.L. Carter Grant, Agribusiness sponsorship

#

TITLE: Agriculture and Natural Resources: Beef Cattle

ISSUE: Beef cattle producers are not taking advantage of management practices available to maximize their profits. Some improvements have been made with those producers who participate in the educational programs and activities offered to them. More producers need to be reached through educational group activities and one-on-one visits with producers. Areas where improvements are needed are: forage production, marketing, herd health, genetic improvement, and nutrition.

WHAT HAS BEEN DONE: The following activities were planned and conducted to encourage producers to adopt recommended practices with their beef operation:

1. Cow College was conducted for four nights with two hours of instruction each night. Subjects covered were: Hay Production Economics and Beef Cattle Marketing; Tennessee Beef Cattle Initiative and Herd Health; Alternative Livestock Watering Systems; Livestock Fencing; and Forage Production and Weed Control.

2. Worked with 20 producers on renovating grass pasture and hay land.
3. Conducted second year of the Feeder Calf Improvement Demonstration on beef producers farm.
4. Conducted mineral survey on beef producers farm in cooperation with U. T. Beef Specialist.
5. Conducted pasture weed control demonstration on three beef cattle farms, targeting buttercup.
6. Assisted 5 producers with calibrating chemical sprayers.
7. Trained 15 producers in BQA (Beef Quality Assurance)

IMPACT:

1. Forty-seven producers attended Cow College. Seventeen attended every night.
2. There were 4900 acres of pasture/hay land re-seeded during the spring and fall. White clover was added to 600 acres, red clover to 490 acres and there were 270 acres of millet sown for hay. These figures are conservative estimates based on seed sales from our major farm supplier in the county and doesn't account for any seed bought outside the county. The addition of legumes equate to a savings of \$8200 or more in added benefits of nitrogen to the soil, production of forages and added gain from grazing.
3. Four producers purchased performance tested bulls this year to improve on their feeder calf production.
4. 20 producers rented the sprayer from the local farmers coop to spray weeds in pasture. Approximately 450 acres were sprayed with good results.
5. Fifteen producers marketed feeder calves through organized feeder calf sales.
6. Ryegrass was seeded on 730 acres for early spring grazing.
7. Six producers are using the fIRM computer record keeping system for their beef herd. Feeder calf records on the demonstration farm were used to make culling decisions.

FUNDING: Roane Farmers Coop, Animal Health Suppliers, Extension, and Roane County.

#

TITLE: Trousdale County Forage and Livestock

ISSUE: Trousdale County, Tennessee derives over 50% of the agricultural income value from beef cattle and calves. Quality forages are a primary indicator of quality beef cattle. To remain competitive in the marketplace, beef producers must take advantage of all available technologies such as: seeding dates, pasture renovation, hay harvest and storage, pasture weed control, and nutrition.

WHAT HAS BEEN DONE: Educational meetings focused on: beef cattle nutrition, improving hay with the addition of legumes, hay storage options, and proper timing of hay harvest. Harvested hay tonage has been below the state average for two of the past three years. Educational meetings and farm visits have focused on hay storage options, bermuda grass

establishment, and beef nutrition. Extended summer droughts occurred during each of the last five years.

IMPACT: Hay tonage in 2001 was 2.3 tons/acre, slightly exceeding the state average, 2.2 tons/acre, that year, the most current data available from the TN Ag Statistical Service. In the previous year, 2000, hay tonage was 2.2 tons/acre. This represents a 4.55% increase during a drought period.

Data from the Trousdale County Farmers Coop indicates that about 215 acres of pasture were renovated by adding legumes. This will increase tonage and improve quality of the forages.

Beef nutrition and minerals were the topic for 13 beef producers. These producers learned the results of a two year study being conducted to analyze the mineral content of local forages. Our forages are low in copper and magnesium with sulfur levels being high. Producers learned how these minerals interact, and supplements that are available to correct the problems.

There was an additional seventeen acres of bermuda grass pasture established. That brings us to a total of about 50 acres established with in the past three years. This provides additional grazing and hay production during summer periods when the fescue pasture is dormant.

FUNDING SOURCES: Extension

#

TITLE: Beef Cattle Profitability

ISSUE: Adoption and utilization of approved practices relating to beef and forage production are essential for producers to improve profitability of Pickett County beef cattle operations.

WHAT HAS BEEN DONE: Extension agent utilized producer meetings, personal contacts, farm visits, direct mailings and newsletters to promote forage production, implanting, herd health, hay storage and weed control in pastures and hay lands.

IMPACT:

*2000- Agribusiness sales records revealed less than 100 acres of pastures renovated with clovers.

*2001- 838 acres renovated with clovers.

*2002- 1023 acres renovated with clovers. Saving in N applications from clover establishment \$11,477.37

*2000-Agribusiness sales records revealed 1836 acres of hay land and pastures renovated with fescue.

*2001-3653.46 acres of hayland and pastures renovated with fescue.

*2002-3462.60 acres of hayland and pastures renovated with fescue. 42% of all hayland and pastures renovated during the last two production years.

WHAT HAS BEEN DONE: The Extension Service has networked with several local and industry related agri-businesses to enhance beef profitability in Overton County. The Extension Service supported and help start the local cattlemens association and has used this group as a vehicle to help carry the educational program to the producers. Several types of programming have been developed and used including mass media(radio, newspaper, annual 16 page Green Tennessee news supplement, and PSA's), newsletters, and a county wide health program flyer. These mass media programs focused on practices from Extension. With assistance from Extension, OCCA purchased 2 sets of portable working facilities, one set of scales, and one herd clover seeder. Awards were started to recognize outstanding producers, businesses, high school seniors with college scholarships, technology scholarships, and other youth leadership activities. We have conducted ten demonstrations on working calves, forages, and weeds. We have visited about 40 producers on a regular basis to discuss their practices, marketing, and held monthly meetings for the OCCA members and county producers where timely subjects were discussed. Two county wide educational meetings were held to address survey related needs. Attention to beef cattle production and promotion were carried on during the year and a survey and evaluation of programs were used by agents.

IMPACT: During the past, farm income from beef has grown from 4.7 million in 1992 to 5.5 million in 1998. The total number of beef cows has grown from 12,500 to 16,000 in 2000'. The membership in the OCCA has grown from about an yearly average of 75 to 125. According to a recent survey, 83 % of the producers acknowledge receiving assistance from Extension beef programs. Evaluations received at meetings this year, indicated 97% of attendants said the information was useful in meeting their needs for help in their operation and 90% said they would adopt and utilize the information from the meetings. In cooperation with the new Beef Advantage program, Overton County had twenty five producers consign almost 1000 calves to the first two sales this fall. A large impact on the beef producers that participated was felt not only because we had half the calves in the second sale, but in the final analysis, producers put extra income in their back pockets over simple just selling weaned calves. The farm mgt. agent estimated an increase of 2.5% to 16 % over selling a weaned calf. It is estimated that because of Extension programs, that twenty percent of the producers purchased a performance tested bull, improved hay storage, adopted recommended health practices, improved forage practices such as soil testing, and made a change in their marketing of their calf crop.

FUNDING: Extension Funds, Beef Industry Representatives, and local cattlemens association.

#

TITLE: Beef Cattle Production Efficiency in Clay County

ISSUE: The Tennessee Agricultural Statistics Service estimates the number of beef cattle in Clay County at 7000 cows. Producers are being faced with the same forces that contributed to the

decline in swine production in Clay County. Producers are challenged to produce high quality forage and market this forage through genetically superior cattle that have been through an intensive health plan. During an advisory council meeting. The following issues or concerns were identified: 1) genetic problems including non-systematic crossbreeding, 2) soil fertility including poultry litter utilization, 3) herd health and 4) lack of controlled calving season. The committee felt addressing the above four concerns would place producers in a position to make changes if current marketing channels changed

WHAT HAS BEEN DONE:

- 1) Marketing meetings, "Future Trends in Beef Marketing", session taught by agent and market consultant ---attendance 96
- 2) Meeting, "Mineralization for Beef Cattle", session taught by specialist---attendance 82
- 3) Demo/Meeting--Cow Herd Culling--session taught by local veterinarian and agent--attendance 72
- 4) Meeting--Winter Feeding Program--session taught by agent---attendance 91
- 5) Two newsletters with timely topics were developed
- 6) Two producers were assisted with participation in Preconditioned Calf Sales---agent helped develop nutrition program and worked with producer and local veterinarian to develop herd health program
- 7) Agent assisted seven producers with developing feeding programs utilizing poultry litter
- 8) Agent averaged four farm visits per week with local producers. Most of these visits were proactive in nature.

IMPACT: All meetings were evaluated utilizing Pre-test and Post-test format

Future Trends in Beef Marketing

Avg. Pre-test score 78

Avg. Post-test score 91

Mineralization for Beef Cattle

Avg. Pre-test score 65

Avg. Post-test score 86

Cow Herd Culling

Avg. Pre-test score 80

Avg. Post-test score 94

Winter Feeding Programs

Avg. Pre-test score 85

Avg. Post-test score 95

- 2) The two producers participating in preconditioned sale received an

estimated \$4 cwt premium over weekly auction--a total premium of \$650 was realized with 26 head @ 625 lbs with .04 price

3) It is estimated the seven producers assisted with poultry litter feeding received a 20 cents per day reduction in winter feeding costs per head. The seven producers have a total 176 cows which on a 120 day feeding program would yeild a total savings of \$4224.00.

Funding: Extension

#

TITLE: TENNESSEE COW-CALF PRODUCERS CAN ADD VALUE TO FEEDER CALVES BY COOPERATIVE MARKETING

ISSUE: For more than 50 years, Extension educational programs in Tennessee and throughout states in the upper-midsouth states have emphasized the market price advantage that producers can realize through cooperative marketing of feeder cattle. Over the years, results of these sales have demonstrated an extra \$2.00 to \$4.00 per cwt. market price advantage. Results of source verified sales from a genetic, health, management standpoint have produced greater market price advantage. Due to the small number of feeder cattle that can be offered for sale by individual producers, it is mandatory that cow-calf producers come together in producing and marketing feeder cattle. This phenomena is currently known as marketing alliances. In spite of the ôhalf-centuryö demonstrated advantage of cooperative marketing, 69 percent of 800 Tennessee producers, surveyed in 2001 and 2002, marketed their cattle through local auction sales. A similar survey made by NAHMS in 1998 in 23 states reported that 85.2 percent of producers marketed their calves via the auction market.

WHAT HAS BEEN DONE: The Agricultural Extension Service, University of Tennessee have cooperated with the Tennessee Department of Agriculture, Tennessee Cattlemen's Association, local livestock marketing concerns, Tennessee Farmers Cooperative and animal health product distributors in carrying out educational programs that included newsletters, producer meetings and result demonstrations that emphasized the advantage of improved prices for feeder cattle as result of marketing through alliances. Calves from numerous sources were grouped with calves that were comparable in sex, breed, grade and weight in an effort to market 50,000 lb. trailer load lots. Research results from Tennessee and other states have demonstrated the added value for market price as the number offered per lot increases.

IMPACT: Although marketing feeder cattle through local livestock auction markets is chosen by 69 percent of Tennessee cow-calf producers, 14,000 did market their feeder cattle through cooperative efforts that included feeder calf sales, video sales, grouping with neighbors and sold off farm during 2001-2002. Added returns over weekly auction markets ranged from a low of

\$34.75 to \$54.00 per head. With 31 percent of the cow-calf producers involved in some sort of cooperative marketing, these cow-calf producers increased the value of their calf crop by \$850. This produced approximately \$11.8 million extra dollars to the income of the state's beef industry. Using the economic multiplier value of 4.0 reported by the National Cattlemen's Beef Association, the added income as result of cooperative marketing would generate \$47.4 million economic impact on the state's economy. Educational efforts will be emphasize continued in the areas of producing and marketing uniform feeder cattle.

FUNDING SOURCES: Extension Funds, Financial Sponsorship Provided by Local Businesses

#

TITLE: Beef Cattle Production and Marketing

ISSUE: Between the 1992 and 1997 Census of Agriculture the number of farms in Jefferson County with beef cattle and calves declined by only 60 farms (929 in 1992 and 869 in 1997). While the number of total beef cows has remained the relatively constant 16,337 (1992) and 16,126 (1997). The value of beef cattle and calves marketed amounted to 6.543 million dollars in 1997 or 32.7 % of the total agricultural income (total agricultural income 20.019 millions 1997 census). Beef Cattle production is a major agricultural enterprise in Jefferson County in both dollar value and percentage of farms having beef cattle. A telephone interview with seven county beef producers identified genetic improvement, marketing, forage production, and animal health as critical needs for Jefferson County Beef Producers.

IMPACT: Beef Cattle producers in Jefferson County have increased their knowledge and skills related to animal health, forages, marketing, beef quality assurance, and genetics by having an opportunity to participate in Beef University. Beef University was a series of seven meetings starting in January and continuing through Mid-March. When asked what participants like most about Beef University they said "Walked away with a sense of understanding on how to raise cattle, a discovery that our livestock need to be marketed not just sold". When asked "If provided the opportunity would you attend a Beef University in 2003?", 100% responded yes. One beef producer has been signed on as a Beef Cattle FIRM Demonstration Farm and Data is being collected to evaluate current progress. Ten beef producers participated in a Herd Health Marketing Alliance demonstration this year.

FUNDING: Extension Funds

#

TITLE: Livestock Production & Marketing

ISSUE: According to the 1997 Census of Agriculture, the number of beef farmers in Coffee County rose from 456 in 1992 to 523 in 1997. Agriculture census data indicted that Coffee

County has a large number of small, part-time beef cattle producers. According to the Census of Agriculture the market value of livestock in Coffee County is \$18,766,000. Youth who exhibit and judge livestock learn sportsmanship, leadership, responsibility and decision making skills.

WHAT HAS BEEN DONE: A Livestock Management Demonstration was conducted on proper vaccinations, vaccination sites, dehorning, castration and weaning of calves for the purpose of giving producers the opportunity Beef Quality Assurance Certified. A forage and hay session was conducted to help producers learn about hay quality and forage testing results. A livestock producer has been assisted in conducting a fIRM recording keeping demonstration. An educational session on the fIRM record keeping program and how it has been utilized on our test demonstration farm was conducted. A demonstration was conducted on grooming, feeding and showmanship of livestock. The 4-H livestock program was promoted through local 4-H meetings, newspaper articles and home visits. Extensive practice sessions have been conducted on animal science judging, horse bowl and dairy quiz bowl.

IMPACT :

- Fifty-four beef producers attended an educational session and demonstration on Beef Quality Assurance standards, forage sampling, improving forage quality and hay quality. Of these producers 44 % indicated an increase in knowledge in BQA qualifications, 63% gained knowledge in forage sampling, 40% increased knowledge in hay quality and 57 % increased knowledge in fescue fungus and how it effected cattle as indicated in evaluation of program.
- A Coffee County Beef Producer has learned to keep computer records on his cattle by participating in Beef fIRM Demonstration program.
- Twenty producers attended workshop on Beef fIRM Program and how it has been utilized on our test demonstration farm. On a scale from 1 (very low) to 10 (very high) 20 producers gave the presentation an average score of 8.7 based on value and quality of information presented.
- Twenty-three youth learned communication and decision making skills through participating on animal science related judging teams.(5- Livestock, 4- Dairy, 5 Meats, Horse 9) The Livestock Judging Team placed 1st in the district contest and 2nd in the state contest. The Livestock Judging team began with no prior experience at giving oral reasons. They improved from an average score of 23 after the 3rd practice to an average score of 32 at district contest and improved to an average score of 36 at the state contest.
- Eight 4-H members learned about Dairy nutrition, management and show procedures through participating on the 4-H Dairy Quiz Bowl team. The Senior team won 1st in the state competition and represented Tennessee at the North American Invitational 4-H Dairy Quiz Bowl Contest.
- Eleven 4-H members learned about breeds, colors and markings, anatomy, conformation, nutrition, reproduction, genetics, diseases, parasites, physiology and endocrinology, horse behavior and psychology, tack and equipment, management and show procedures through participating on the 4-H Horse Bowl team.
- Twelve youth learned about animal care, responsibility, grooming, feeding and showmanship of livestock through exhibiting livestock at county, district and state shows.

FUNDING: Extension Funds, Local Farms and Businesses.

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TITLE: UT ULTIMATE BRED HEIFER PROGRAM

ISSUE: Since all 95 counties in Tennessee have cattle operations, beef cattle comprise the number one farm product -- accounting for \$416 million in sales in 2000 (Tn Beef Facts, TnBeefCattleInitiative.Org, 2001). The number one beef quality challenge in the U.S. is low overall uniformity and consistency (NCBA, National Beef Quality Audit, 2000).

WHAT HAS BEEN DONE: Extension Implemented the UT Ultimate Bred Heifer Program to add value (quality and uniformity) to heifers by following strict guidelines for health, breeding, management, and marketing. 124 heifers from Dickson, Giles, Davidson, Humphreys, and Montgomery Counties were sold on November 9, 2002 for an average price of \$949.84.

IMPACT:

1. Practice Changes -

- a. An increase from 3 participants in 3 counties in 2001 to 8 participants in 5 counties for 2002.
- b. An increase from 35 heifers in 2001 to 124 heifers in 2002.

2. End Results -

- a. If a producer purchased a heifer (500 lbs @ 85 cents/lb) for this sale, then total expenses were approximately \$815.00 (Stull, UTAES, 2001). Then this program added at least \$134.84 to the value of each heifer for a total of \$16,720.16.
- b. The calves from these 124 heifers are sired by performance tested bulls that will add 25 lbs/calf or \$17/head (UT Ext An Sci, 8-9-99). These sires will add value of \$2,104.00
- c. The calves from these 124 heifers have more uniform genetics that is worth \$10.26/head more (Neal, UTAES, 11-1-01). This uniformity will add value of \$1,272.24.
- d. One dollar in added livestock sales results in \$2.24 to the state's economy (TN AG, PB1660). This program added an additional \$37,453.16 to the economy.
- e. Total economic impact of this program = \$57,549.56.

FUNDING: Extension funds, consignment fees, Dickson Livestock Center, business sponsors.

#

TITLE: Beef Cattle Improvement

Issue: According to Tennessee Agriculture Statistics 2001, the average farm size in Johnson County is 73 acres. Farm numbers have dropped from 888 in 1992 to 679 in 1997. During 2000, 10,300 acres of hay was harvested. Johnson County has approximately 10,000 head of beef cattle

and calves. Due to increased real estate prices as reported by the Johnson County Assessor of Property, Johnson County beef producers are unable to increase herd size. Since herd size of cow-calf producers is relatively small, this limits the marketability of feeder calves for Johnson County producers.

WHAT HAS BEEN DONE:

1. Conducted educational program for beef cattle producers on genetic improvement and marketing of feeder cattle.
2. Conducted weekly radio programs on topics of interest for beef cattle producers.
3. Recruited 3 producers to participate in a state wide forage mineral test survey working with the livestock specialist and the soil testing lab.
4. Recruited 4 producers to participate in the Beef Cattle fIRM program working with the area farm management specialist.
5. 71 soil tests were taken on forage crops in Johnson County during 2002 and the agent communicated with producers in writing making recommendations for lime and fertilizer applications.
6. Recruited 7 beef cattle producers from Johnson County to participate in the Northeast TN Beef Expo.
7. Increased the number of producers marketing calves through video sales from 2 in 2001 to 10 in 2002.

IMPACT: Those producers using the Beef Cattle fIRM recordkeeping system to track the performance of their cow/calf operation have developed an identification system for their herd which aids them in better management during the breeding and calving system which will yield a more uniform calf crop in the future. Those producers marketing their calves through the Lower Middle Tennessee Cattle Association Video Sales realized an additional income of between \$5.00 and \$11.00 per hundredweight increase as compared to auction markets. Considering the average load size to be approximately 50,000 pounds this means that for each trailer load marketed through the video sales, the producers realized additional profit of between \$2,500.00 and \$5,500.00 as compared to maketing the calves through auction markets.

FUNDING: Extension

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TITLE: Beef Cattle Profitability

ISSUE: Beef cattle remains the number one agricultural enterprise in White and Van Buren Counties with more than 28,000 head of cows and an annual combined income of \$12,500,000.00. With average herd sizes of less than 45 cows, marketing alternatives for these producers have been limited to weekly auctions and organized feeder calf sales. Improved management practices and health programs need to be adopted by producers in order to expand marketing options.

WHAT HAS BEEN DONE: Agents worked with local cattlemen's association to plan, implement and evaluate the 2002 Cumberland Beef Day. Programming focused on improving nutrition of beef herds through mineral supplementation and the relation to breeding efficiency, elimination of bone and hoof problems, improved immune system function, and increased resistance to disease and parasites. A multi-state beef tour highlighted the effects of copper supplementation on the efficiency of cow herds. The tour also focused on backgrounding operations and potential markets for local beef producers. Six local producers participated in the Tennessee-Kentucky forage mineral study with one herd being selected to evaluate copper and selenium levels in blood serum. A producer meeting was conducted to discuss the findings of the mineral survey and emphasize how mineral supplementation could increase production and add value to feeders. Agents met on monthly basis with beef marketing committee to plan, implement and evaluate ongoing beef marketing initiatives. A producer meeting was conducted to announce and promote a local preconditioning sale. Four TLP video sales were connected to the local extension office for local producers to see the advantage of this alternative market and how the video sale functions. Three on-farm pasture legume variety and establishment demonstrations were conducted along with three warm season forage establishment demonstrations. A local farm tour in White and Van Buren Counties emphasized breeding and genetic improvements, improved handling facilities and warm season forage production.

IMPACT: As a result of the educational efforts of extension agents and the beef marketing committee, producers have increased reproductive efficiency, improved animal performance and adopted recommended health practices, ultimately increasing marketability of local feeder cattle.

Forty-four additional producers utilizing alternative marketing strategies, including video board sales, truckload lots from multiple producers, as well as single source loads. Twenty-three producers marketed feeder cattle through the newly organized preconditioning sale. As per information gathered from the Agricultural Economics Specialist, producers utilizing these alternative markets increased total income by \$34.75 per head as compared to weekly auctions on the same day. The total increase in revenue for these producers was in excess of \$66,000.00. As a result of multi-state beef tour, eighteen producers gained knowledge on effects of mineral supplementation on the efficiency of beef herds.

FUNDING: Extension, local agribusiness industry, pharmaceutical companies, local cattlemen's association and beef breed associations

#

TITLE: Beef production

ISSUE: Beef cattle are the number one agriculture enterprise in Sevier County. There are nearly 9,500 beef cows in the county. Producers are looking for ways to improve profitability on the farm through beef production. The Extension service developed an educational plan to assist

producers with increasing weaning weights and improving pasture and hay forages.

WHAT HAS BEEN DONE: Extension developed an educational program designed to assist beef producers the areas of forage production, health program and increasing weaning weights.

IMPACT:

*75% participants reported learning something new they would incorporate into there management program

*Producers indicated they plan to renovate a total of 4,500 acres of pasture and hay fields for 650 head of cows.

*Increased weaning weights expected from implementing recommended practices would result in expected gains of nearly 25 pounds per calf. With expected calving percent of 80% or 520 calves, this would result in a 13,000 pound increase in weaning weights or nearly \$12,000. increase in farm profits.

* 89% participating in the herd health fair indicated learning some new animal health information

*15 producers plan to follow recommended health practices with 450 calves. This could result in nearly 50 pound gains per calf or 22,500 pounds with an increase of approximately \$20,000. in farm profits

*As result of on farm demonstrations 2 producers plan to make changes in there forage management practices. These changes can result in a savings of winter forages. The producers estimates the savings to be nearly \$7,000.

* 90% of program participants surveyed indicated that Extensions programing had been valuable to them.

* Surveys and producer interviews reveled that 21 producers made changes in their forage production practices as a result of extension programing. 15 producers adding clover to there pasture and hay fields reported a increase of 32 pounds per calf average hay tarp or storing more hay inside a barn. Producers estimated a 30 % savings in hay stored this way and valued the savings to be nearly \$4,500.00.

FUNDING: Extension Funds

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TITLE: Beef

ISSUE: There are 23,000 brood cows in Fayette county and sales amounts to \$4.1 million. Cattle producers need to remain a profitable enterprise and to utilize the 62,000 acres of highly erodible land unsuitable for row crops.

WHAT HAS BEEN DONE: Agent conducted three county area meeting, wrote timely tips on check stubs at Livestock sale barn, conducted bull fertility clinic, promoted membership in county livestock association, and encouraged soil and forage testing.

IMPACT:

1. Tested bulls at fertility clinic and found five to be sterile-three from one herd. Had this not been determined, potentially 60 calves would have been lost at a value of \$30,000 for this one producer.
2. 30 cattle producers gained a better understand of animal grading and how to improve the grades and profits of their herds.
3. 85 soil samples were tested for hay and pastures. Soil sampling has been shown to improve profitability through proper use of fertilizers.
4. 75 producers joined the county livestock association to gain better knowledge of the beef industry.
5. 12 forage samples were submitted to forage testing lab. Forage test have been shown to increase efficiency of feeds and reduce cost.

FUNDING: Extension, Farmers Coop, Animal Health Industries, Somerville Farm Supply.

#

TITLE: Beef Cattle Production (Includes Forages)

ISSUE: Hardin County has 12,000 cattle and calves and 6,000 beef cows. Over 30,000 head of cattle and calves were marketed this year at the local, weekly livestock auction. Many producers are still using poor genetics and poor quality head sires. Hardin County has 12,000 acres of hay land and 35,000 acres of pasture grazing lands.

WHAT HAS BEEN DONE: The agent planned and conducted the following educational activities to assist beef and forage producers to improve quality of forages and increase profits in the cattle business:

- Assisted 56 beef producers in marketing quality feeder calves.
- Conducted Breeding Soundness Clinic for 60 herd bulls.
- Planned and carried out "Hay Day 2002" to increase the level of income in beef and forages.
- Planned area Tenn-Vac Beef Cattle Meeting. These meetings are part of the 9-county priority programming.
- Worked with beef producers in herd sire selection - 8 of which are lease bulls, 10 producers buying P.T. Bulls in 2002. 55 P.T. Bulls with known genetics in county beef herds.
- 5 on-the-farm cattle working demonstrations.
- News articles, newsletters, fliers and other mass media were used to encourage the use of recommended production practices.

IMPACT:

- In 2002, 1,979 calves were marketed through an organized Feeder Calf Sale from 56 producers.
- 92.8% graded M-1 & M-2, only 6% graded Odd Lots, which was down 1% from 2001. A price comparison indicated a \$.04 advantage from weekly auction sale price or \$40,000 more to the producers.
- The Breeding Soundness Clinic revealed 9 out of 60 tested failed (15%) non-breeders. The testing alone saved these producers a potential of 107,000 in lost revenue.
- In 2002, over 17,000 lbs. of clover seed were purchased at our local farmer's co-op. This could renovate 3,000 acres of fescue pasture. Research shows the effects of renovation (3,000 acres) would be a total savings of about \$17,500 to farmers annually.
- Area Tenn-Vac meeting discussed cattle quality, grades, condition score, herd health and other practices to improve profits. 55 males, 6 females and 1 Hispanic attended.
- Extension efforts to improve feeder cattle graded are directly related to our continued efforts to place herd bulls of known genetics in Hardin County to beef herds. 55 bulls placed have the potential to improve profit \$66,000 their first year.
- 10 news articles, 4 newsletters, posters and several fliers were used to promote a total Beef & Forage Extension Program.
- In 2002, 216 beef farms generated \$6 million to the county economy.

FUNDING: Extension Funds, Livestock Association & other Ag related businesses.

#

TITLE: Beef Cattle Improvement and Profitability

ISSUE: Hawkins County ranks 17th in the state in beef cattle production with 18,000 beef cows. Beef cattle make up 36 percent of the market value of all agriculture products sold from Hawkins County and 79 percent of all livestock, poultry and their products that are sold from the county. The market value of beef cattle, according to the 1997 Census of Agriculture, for Hawkins County was over 5.7 million dollars. County beef producers indicate shrinking profit margins as a primary concern and would like to add value to their product.

WHAT HAS BEEN DONE: Beef Cattle Profitability School was held that consisted of seven, two-hour sessions. At Farm Expo 2002, a 2.5 hour session was held on nutritional supplementation of beef cattle and the economics of marketing alternatives. Agent distributed quarterly newsletter concerning beef cattle management and profitability. Agent conducted a day long workshop concerning producing feeder cattle to meet today's demand and the future demands of the beef industry. Worked with other agents in the area to present Northeast Tennessee Beef Expo. Worked with beef producers to develop marketing, health, breeding and nutritional programs to add value and quality to their beef cattle programs through telephone calls, farm visits, and office visits.

IMPACT: Approximately 17 beef cattle producers worked cooperatively to market approximately 967 head of beef cattle during the program year. It is estimated that this generated \$48,674 in additional income when compared to weekly auction system. Seven producers who attended the beef cattle production/improvement educational programs presented in Hawkins

County purchased performance test bulls during the program year. Agent worked with interested beef cattle producers to reform the Hawkins County Cattlemen's Association (HCCA). The HCCA has been reformed and has 66 cattle operations as members in the association. Agent had 16 people to participate and complete a Beef Quality Assurance program.

Producers who attended the Beef Cattle Profitability School indicated that on a scale of 1 to 5, with 1 being poor and 5 being excellent:

1. How beneficial has the beef course. (4.6)
 2. Did you learn anything that would make your cattle operation more profitable. (4.5)
 3. Did you learn anything that will improve the quality of the calves you produce. (4.5)
- Beef cattle producers who attended the Beef Cattle Profitability School, indicated that they plan to change or implement the following: record keeping, animal identification, genetic improvement, health program and nutritional management.

The beef producers who attended the Northeast Tennessee Beef Expo indicated:

1. 84% indicated that they plan to improve their cattle handling facilities.
2. 88% indicated that they plan to change their management of parasite control and vaccinations.
3. 38% indicated they plan to change their animal identification program.
4. 84 % indicated they plan to make management changes due to the Beef Cattle Convenience Traits session.

FUNDING: Extension

#

TITLE: Beef Production Issues

ISSUE: Beef cattle make up a major part of the agricultural industry in Greene County with 32,000 mature beef cows and a total of 70,000 total cattle and calves according to Tennessee Agriculture 2001. The 1997 U.S. Census of Agriculture reports 1881 farms with beef cattle in the county. It is easy to see that beef cattle contribute a large share of the \$32,358,000 livestock income for the county. Educational opportunities abound in beef cattle issues as the diverse audience includes both full and part time producers, Young (<30) as well as older (60+) producers and all levels of experience. The average age of producers in the county is 56 and the estimated herd size is 30 - 35 head. In reviewing baseline data information from the grazing school and Master Livestock Volunteers, along with information gained from the advisory committee and personal interviews, it was evident that there were lost opportunities for

increased profitability. Beef and forage producers often fail to optimize profitability factors due to constraints on their management ability due to off farm responsibilities or a lack of knowledge of what opportunities for increased profitability exist. Traditional ideas and values play a large part. As a result, areas such as managed grazing, improved forage management, improved record keeping, health programs, genetic selection, and whole farm management are often neglected or receive minimal attention. In addition, changes are in the near future regarding food

safety issues that will affect producers on the farm level in the form of new requirements for identification, source verification, records, certification of chemical and antibiotic usage, and health program administration. In the future, more and more consumers, both wholesale and retail, will require certification and verification of the history of the product. Potential loss of income can occur from loss of product due to injection site lesions, chemical residues, and excessive bruising. These losses will be passed directly back to the producer through lowered prices, reluctance or refusal to buy, or request for reimbursement. Educational activities that address these areas, as well as opportunities for personal consultation are needed to assist producers in making sound decisions that will result in increased profitability of the farm business.

WHAT HAS BEEN DONE:

1).A grazing school was planned for 2002 but was not held due to two factors beyond control. First, a severe drought eliminated pasture availability early in the year and continued throughout the year severely limiting producer participation, and secondly a situation with the Tobacco Experiment station with whom the school was planned made it uncomfortable to have access to resources such as cattle, pastures, and supplies. With this situation at hand, it was decided to postpone the school until the drought broke and the situation at the station stabilized. Instead, rotational grazing topics were integrated into the winter seminars held at the Extension office and grazing was the topic of an on farm meeting held this year.

2).The Northeast Tennessee Beef Expo was held as scheduled and featured Dr. Temple Grandin, world renowned animal handling specialist from Colorado. In addition, BQA techniques were discussed, Convenience traits, Management techniques, and permanent identification including freeze branding and Electronic Identification were also included in the program. This program served 302 pre-registrants.

3). Planning for a Forage field day to be held in early 2003 in conjunction with the Tobacco Experiment Station was put on hold pending the outcome of the situation with the Tobacco Experiment Station investigation. As a result, forage topics were added to winter seminars and programs presented to commodity groups. If new administration at the station is agreeable, this issue may continue after the situation stabilizes.

4). A total of three winter seminars were held that dealt with: 1)Management of the mature beef cow including health, minerals, forage, nutrition, reproduction, and other topics; 2) Developing replacement heifer including selection, reproduction, synchronization, nutrition,

forage, etc. and; 3)Managing bulls for the cow herd. 4).Agent developed and published materials titled Managing the Mature Beef Cow for winter seminars. 5).The two IRM farms continue to participate in the program and we have collected baseline data on one farm as well as first year data on the second. 6).Beef Quality Assurance training was available through two of the winter seminars, Northeast Tennessee Beef Expo, and meetings of the Local Livestock Association. Training was available on a call in basis for individuals as well. In addition, the agent assisted with a regional training for agribusiness employees and producers. 7).Electronic identification and the Country of Origin Labeling regulations were discussed in several meetings involving the local livestock association, Northeast Tennessee Beef Expo, and the winter seminars. 8).Agent made on site farm and business meetings as requested to promote the efficiency of beef production. Talks made to other community groups such as ruritan and others emphasized the topics outlined in the annual plan. Visits, phone calls and other contacts totaled more than 1,400 for areas covered in this plan.

IMPACT:

1).More than 100 producers were exposed to rotational grazing techniques through a series of winter seminars. The results of post tests and interviews indicated that more than 70% of the respondents planned a change or had increased their knowledge of the benefits associated with rotational grazing. These respondents indicated that they understood the basic concept of managed grazing and what it can and cannot do for a forage management program.

2).There were 302 pre-registrants for the Northeast Tennessee Beef Expo that featured topics of freeze branding, permanent identification, animal behavior, convenience traits, vaccinations, and parasite control and management practices. Results of the survey completed by the applicants were: 57% of the respondents had farm income in excess of \$20,000, 56% owned between 50 and 200 acres, and 75% owned 50 cows or less resulting in the bulk of the respondents being considered "average" farmers for this area. Out of this audience, 66% said they planned to make 5 changes in management based upon material received from the animal behavior/handling facility presentation. Of these, 91% felt that they would see a positive economic change in the first year from this change. 83% of the respondents planned five or more changes as a result of the parasite control and health program presentation and 95% of them expected a net positive gain in receipts as a result. 35% of the producers have now planned 5 or more changes in animal identification procedures while 66% of them expected their operation to profit from these changes, they indicated the major change would be longer to result in a better image for their product. 95% of the producers also felt that the proposed mandatory changes in source verification and identification were needed and would improve the future of the beef industry. 74% planned five or more changes in genetic selection to improve the marketability and safety of the cow herd by selection for convenience traits. 90+% of these indicated they felt like not only would safety aspects increase, but also the value of their product. The survey also indicated that nearly 30% of the producers in attendance had never attended a UT Field day before. With these statistics, it is easy to see that large portion of the producer base, land base, and cattle base, has been

influenced to make changes based on research information, and a high percentage indicated that their operation would improve, as would profitability as a result.

3). The winter seminars were evaluated through pre and post tests to measure change in knowledge. One test series that asked about forages, nutrition, production practices, reproduction, soil fertility showed an average increase in knowledge of 16% after the seminar was complete when compared to previous knowledge. Another test series that dealt with selection health programs, beef quality assurance, marketing and culling strategies indicated an increase in knowledge of 28%. This audience represented producers that were mainly 50 cows or less and had a forage base of 25 to 150 acres.

4). The IRM farms represent an average forage base of 125 acres and a cow herd size of 32 cows plus a varying number of calves. The records produced results of an increased average weaning weight of about 70 pounds that represents an added revenue of about \$49.00 per calf. An informal evaluation of the calves showed a reduction of 30% in the amount of calves that could have graded M-2 and a decrease of 50% in the calves that were considered borderline in frame size. With discounts of \$7.00 per cwt. for M-2 versus M-1, an increase of \$38.50 per calf for increased muscling is calculated and an increase of about \$48.00 on every short calf that was upgraded to medium frame. In addition, one herd moved from a predominantly red coat color to predominantly black resulting in positive economic change for local marketing conditions.

5). More than 1,400 contacts were made with producers involved in beef and forage production.

FUNDING: Extension Funds

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TITLE: Aquaculture

ISSUE: Aquaculture is intensive management of aquatic animals and their environment. It requires a great amount of attention to details, but since many aquaculturists are novices, they seek more information and help from aquaculture Extension both at the county and specialist levels. Yields are low and production must be increased for such enterprises to be profitable.

WHAT HAS BEEN DONE: Production of aquatic animals in ponds continues to be the profitable culture method. With the absence of processing capability and organized marketing, niche marketing is the profitable choice for selling fish and freshwater prawn. Aquaculture production principles were presented at seven workshops, two field days, and three regional conferences. Interest continues to increase in the potential for growing freshwater prawn so a large amount of time and emphasis was placed on their culture. A prawn tour to Mississippi was conducted in January. More than 100 packets containing culture information, sources of juveniles and for necessary equipment were mailed. A full-day prawn conference was held in

November where the most recent research information that is available was presented. Participants were given a notebook filled with pertinent prawn culture publications and summaries of the talks given by the presenters. Research and demonstrations related to both nursery and pond production of prawn were done at the Knoxville Experiment Station and the Highland Rim Experiment Station. The tour, the conference and some of the research were supported in part by a \$20,000 grant from the Tennessee Department of Agriculture. Additionally, 10 new Southern Regional Aquaculture Center fact sheets were printed and made available. A CD from SRAC with all publications to date was provided to every county Extension office.

IMPACT: Prices for catfish sold to processors have been depressed this year. This means that niche marketing has been even more important than ever. Extension helped five producers find alternative buyers for their fish. Fee-fishing was initiated in ponds by three producers. Production of freshwater prawn doubled from 100 acres to 200 acres. Production averaged only about 600 pounds per acre, but more niche markets of sales on the pond bank immediately after harvest were activated. These sales were around \$8.00 per pound compared to only \$5.50 per pound on the open market. Our research ponds averaged 1,250 pounds per acre, a yield that producers hope to attain as best management practices are put into place. There were 17 people who went on the prawn tour and saw a prawn hatchery, a prawn nursery, a feed mill and research ponds. There were 96 people who attended the prawn conference and learned production, harvest, marketing and economics principles. The attendees gave the conference an overall score of 4.1 (very good) where score of 5 equaled outstanding. More than 600 people were introduced to prawn farming at two field days. Since prawn farming is so new, these learning experiences will be tremendously worthwhile in the future to the participants as they grow future crops of prawn. Research - demonstration ponds yielded 1,250 pounds per acre, more than twice the state production average. As this information is transferred to producers and put into their management strategies, great profits will be made.

FUNDING: Extension, Tennessee Department of Agriculture

#

TITLE: Expansion of Pork Production in Lower Middle Tennessee

ISSUE: Tennessee swine producers have had difficulty entering the pork industry. Marketing, financing, and competitive size are just a few of the challenges or barriers to entry in the pork industry that many Tennessee producers face. Alternative methods of entry into the pork industry in Tennessee are needed.

WHAT HAS BEEN DONE: The University of Tennessee Swine Extension staff has worked closely with the Tennessee Department of Agriculture and the Tennessee Department of Economic Development to attract a swine integrator into the state.

IMPACT: A major cooperative has agreed to expand their contract operations in Lower Middle Tennessee. A group of producers willing to raise pigs on a contractual basis has been identified. These producers will produce approximately 100,000 head of market hogs per year in the associated breed-to-wean facility, nurseries and grow-finish facilities. The construction cost will be \$10,861,476 providing a significant influx of dollars to the community. Additionally, the breed-to-wean operation will have an annual gross income of \$1.54million dollars, the nursery producers will have an annual gross income of \$370,000 dollars, and the producers finishing the pigs will gross \$1,250,000 annually. Additionally, annual gross value of the market hogs will be approximately \$11,731,000. Using a 1.8 multiplier effect to the local economies, the income to the producers should generate over \$5.6 million dollars to the local communities.

FUNDING: Extension

KEY THEME - PLANT PRODUCTION EFFICIENCY

TITLE: Cotton Variety Testing Yields Promising New Varieties

ISSUE: Up-to-date information on the adaptation of new cotton cultivars to field environments is essential for all aspects of cotton crop management. To accommodate producers, extension agents, and industry scientist with such information, the University of Tennessee Cotton Agronomy and Physiology Project conducted a comprehensive program of cotton variety testing at three experiment stations and at one off-station site (Agricenter International) in 2002.

WHAT HAS BEEN DONE: This industry-supported research involved field trials and quality testing of commercial cultivars and new experimental strains. In response to their requests, the 2002 data were posted on a web site before December. Two sponsored protocols were also conducted in 2002 to quantitatively characterize new experimental strains through plant mapping. This work identified several promising experimental strains with superior yield potential as well as transgenic resistance to certain herbicides and insect pests.

IMPACT: This project identified several promising new transgenic varieties for Tennessee, based on their performance in multi-location trials in 2002. Results from the cotton variety testing program will provide the research basis for extension planting recommendations for 2003. The data are available on the TAES variety website and can help producers to select varieties that will benefit from high yield potential, early maturity and superior fiber quality.

FUNDING: Hatch Act

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TITLE: Agricultural and Natural Resources: Row Crop Production

ISSUE: Over the past decade, Shelby County row crop producers have expressed an increased concern for row crop profitability in Shelby County. The Tennessee Agricultural Statistics Service reports that Shelby County ranks 26th in corn (5,300 acres), 11th in wheat (9,500 acres), 9th in cotton (24,000 acres), and 11th in soybeans (42,000 acres), as reported in the state. In cotton production, yields and acreage have fluctuated. In soybean production, yields and acreage have stayed constant for the most part. Overall, cotton and soybean acreage has declined due to reduced profitability of the commodities and urban growth. As for yields, they have stayed constant and/or increased due to improved farming practices and technology adoptions. In this day and age, reducing dollars spent on inputs while increasing yields is a necessity.

New technology and production management tools are available for over 300 row crop producers on file. Data from surveys, one on one contacts, and other needs assessment techniques indicate that there are numerous row crop production management issues which can be addressed in the Shelby County row crop production program that will help build awareness, increase knowledge, and encourage producers toward solving row crop production management improvement issues in Shelby County.

WHAT HAS BEEN DONE: Two (2) winter meetings, five (5) field days and thirteen (13) demonstration plots were conducted emphasizing recommended practices and marketing. Monitoring for insect infestation was also conducted throughout the growing season. Many letters, farm visits and telephone calls were used as an avenue to educate row crop producers on recommended management practices and marketing.

IMPACT: Producers were aware of moth flights, plant bugs, stinkbugs and other insects coming into the area due to the IPM monitoring program. Not only were producers aware of current insect pressures but they were aware of current crop situations which in turn helped them in decisions that helped increase yields.

* One participant stated that the program was very comprehensive and that they liked that a lot.

* 100 percent of the participants that filled out surveys at programs held, rated the meetings good/excellent.

* Producers were aware of IPM strategies that helped them increase yields that would have otherwise been lost.

* The use of various marketing techniques has helped farmers stay in business.

This program has been instrumental in providing 98 producers with research based information. This information has helped the producers gain knowledge in the areas of weed control, IPM strategies, variety selection, marketing techniques, and other recommended management practices for the commodities they grow to make a living.

FUNDING: Extension and Local Ag. Businesses

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TITLE: Commercial Cotton Production

ISSUE: In today's agricultural environment, row crop diversity continues to play a key role in a sustainable agricultural enterprise. Cotton plays a key role in the crop diversity of Dyer County. Over the last five years (1997-2001) Dyer County has averaged 35,900 acres of cotton production per year. The county ranks 7th in the state for cotton production. Cotton production ranks 2nd in Dyer County gross income generated from cotton production with an estimated value of \$12.9 million dollars in 2001. Continued changes in technology (genetic engineering/herbicide tolerance/insect resistance) and rapid development of new cotton varieties (conventional, bollgard, roundup ready, bollgard/roundup ready) creates a demand for local evaluation of these new varieties and is essential to maintain and/or improve productivity and profitability.

WHAT HAS BEEN DONE: Through observations and surveys of ag extension committee members and a cotton advisory committee, the need to continue evaluating new varieties and new plant technologies (genetic engineering/herbicide tolerance/insect resistance) has been identified as an area that continues to need attention for the benefit of Dyer county producers. One result demonstrations, two economic systems comparisons, one production update meeting, one newsletter, two news column articles, eight marketing teleconferences, and numerous one-on-one contacts were utilized to show producers the advantage of following UTAES recommended production practices. All demonstration results were published in a demonstration results book (150 copies) and made available to Dyer County producers and local agricultural suppliers.

IMPACT: Through the use of the top five high producing cotton varieties (3000.11 lbs/acre lint cotton average) compared to the lowest five producing varieties (2472.93 lbs/acre lint cotton), Dyer County producers have the opportunity to realize a 527.18 pound per acre net yield increase advantage and at \$0.52 per pound, a net economic return of \$274.13 per acre. Producer surveys have shown that 95.5% of Dyer County producers make production practice changes based on Dyer County and UTAES information about variety selection. Assuming 95.5% of the 35,900 acres make a variety selection from the high producing varieties results in an overall economic impact of \$9,398,409.90 added income.

FUNDING SOURCES: Extension funds and private seed company representatives and local agricultural suppliers.

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TITLE: Commercial Corn Production

ISSUE: In today's agricultural environment, row crop diversity continues to play a key role in a sustainable agricultural enterprise. Corn plays a key role in the crop diversity of Dyer County. Over the last five years (1997-2001) Dyer County has averaged 23,680 acres of corn production per year. The county ranks 6th in the state for corn production. Corn production ranks 3rd in Dyer County gross income generated from corn production with an estimated value of \$7.6 million dollars in 2001. Continued changes in technology (genetic engineering/herbicide tolerance/insect resistance) and rapid development of new corn varieties (yellow, white, high-oil, herbicide tolerant) creates a demand for local evaluation of these new varieties and is essential to maintain and/or improve productivity and profitability.

WHAT HAS BEEN DONE: Through observations and surveys of ag extension committee members and a grain advisory committee, the need to continue evaluating new varieties and new plant technologies (Roundup Ready, High-Oil, Liberty Link, IMI Tolerant) has been identified as an area that continues to need attention for the benefit of Dyer county producers. Four result demonstrations, one production update meeting, one newsletter, two news column articles, eight marketing teleconferences, and numerous one-on-one contacts were utilized to show producers the advantage of following UTAES recommended production practices. All demonstration results were published in a demonstration results book (150 copies) and made available to Dyer County producers and local agricultural suppliers.

IMPACT: Through the use of the top five high producing corn varieties (173.72 bu/acre average) compared to the lowest five producing varieties (119.33 bu/acre), Dyer County producers have the opportunity to realize a 54.39 bushel per acre net yield increase advantage and at \$2.10 per bushel, a net economic return of \$114.22 per acre. Producer surveys have shown that 95.5% of Dyer County producers make production practice changes based on Dyer County and UTAES information about variety selection. Assuming 95.5% of the 23, 680 acres make a variety selection from the high producing varieties results in an overall economic impact of \$2,583,016.70 added income.

FUNDING SOURCES: Extension funds and private seed company representatives and local agricultural suppliers.

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TITLE: Henry County Corn Production

ISSUE: Henry County corn growers plant 32,000 acres annually. Corn is our top cash crop. In 2001, farmers have averaged 131 bu/ac. At \$2.05/bu, gross earnings equal 8.6 million dollars. Corn production accounts for 50% of our cropped acreage and 20% of the gross revenue from agriculture. With the development for new varieties and the need for more efficiency in corn production, it is important that producers receive information helpful toward making sound management decisions. What has been done? The Henry County Extensions Staff, producers,

advisory group members, and dealers selected varieties to use, prioritized and utilized on-farm demonstrations to collect information. Information was distributed by four news articles which printed complete tables of data, one winter meeting, 2 farm supplier displays, numerous farm visits, and one-on-one contacts to inform producers of the benefits of variety selections and no-tillage, (the following comparison demonstrations were implemented: White variety, early, medium, an full variety; 3 deep tillage vs. no-till plots; B.T. variety; and fertility lab comparison.)

IMPACT: UT recommended varieties and results of analysis data from multi-county plots have been adopted by 96% of Henry County producers. Producers look for this data annually and rank it as their best source on information. According to surveys, producers realize 4 bu/ac increase in 2001 in corn yields compared to the average yield of all varieties. In Henry County, this is an increase on \$262,000. Over the past 4 years (98, 99, 00, 01) producers have averaged 5.2 bu/ac or \$341,000 using a consistent \$2.05/bu price.

County fertilizer laboratory comparisons show no yield response to the use of micro-nutrients but \$18 increase in per acre cost when a local private lab is used. For these same 32,000 acres, \$576,000 potentially can be saved in production cost if UT Soil Test recommendations are used.

FUNDING SOURCES: Extension Funds, Hybrid Seed corn suppliers, and local farm suppliers.

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TITLE: Henry County Soybean Production

ISSUE: Henry County soybean growers plant 37,000 acres annually. Soybeans are one of our top cash crops. In 2001, farmers have averaged 36 bu/ac. At \$5.46/bu, gross earnings equal 7.27 million dollars. Soybean production accounts for 50% of our cropped acreage and almost 20% of the gross revenue from agriculture. With the development for new varieties and the need for more efficiency in soybean production, it is important that producers receive information helpful toward making sound management decisions.

WHAT HAS BEEN DONE: The Henry County Extensions Staff, producers, advisory group members, and dealers selected varieties to use, prioritized and utilized on-farm demonstrations to collect information. Information was distributed by four news articles which printed complete tables of data, one winter meeting, 2 farm supplier displays, numerous farm visits, and one-on-one contacts to inform producers of the benefits of variety selections and no-tillage, (the following farm comparison demonstrations were implemented: Group V; Group V Conventional vs. Group V RR; Group III; Group IV RR; and Conventional Group IV.)

IMPACT: UT recommended varieties and results of analysis data from multi-county plots have been adopted by 96% of Henry County producers. Producers look for this data annually and rank it as their best source on information. According to surveys, producers realize 1.6 bu/ac increase in 2001 in soybean yields compared to the average yield of all varieties. In Henry County, this is an increase on \$323,000. Over the past 4 years (98, 99, 00, 01) producers have averaged 2 bu/ac or \$326,000 using a consistent \$5.46/bu price.

FUNDING SOURCES: General Extension Funds, Soybean seed suppliers, and local farm suppliers.

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TITLE: Corn Production

ISSUE: Weakley County ranks second in the state in corn production with 6.5 million bushels produced in the year 2000 according to Tennessee Agriculture 2001 Report. This represented approximately \$13 million dollars in farm income. Approximately 61,000 acres of corn was grown in Weakley County in 2002 with a county average of 125 bushels per acre representing over \$17 million in farm income, according to the Weakley County Farm Service Agency data. There are 120 producers in Weakley County that grow 400 acres or more of corn each year. This is the target audience.

WHAT HAS BEEN DONE: According to producer survey results and on-farm interviews; standardized variety testing, fertility demonstrations, insect and disease identification, value-added opportunities and improved crop marketing skills continue to be requested needs. Five variety test plots of differing maturity or bio-enhanced genetics were conducted in Weakley County. These same varieties are part of a standard test conducted in several West Tennessee and West Kentucky counties. Seventy-five (75) varieties were compared in these five demonstrations. One corn fertility demonstration was conducted to compare homogenously blended fertilize with standard bulk fertilize. Two local educational meetings and one area educational meeting was conducted, as well as newsletters, phone conversations, office visits and on-farm visits to inform producers of proper variety selection. Three educational meetings addressed marketing skills improvement.

IMPACT: According to producer surveys from Weakley County and Northwest Tennessee, 96% of producers use variety testing information in making variety selection for their farming operation. Producers utilizing superior performing varieties realized approximately a 3.8 bushel per acre advantage over traditional hybrids. Since Weakley County producers planted some 61,000 acres of corn in 2002, this translates to an additional \$450,000 of revenue for Weakley County producers.

FUNDING: Extension Funds and private seed industry.

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TITLE: Small Grain Production

ISSUE: Weakley County ranks third in the state in wheat production with 1.87 million bushels produced in the year 2000 and representing approximately \$5 million dollars in agricultural income according the Tennessee Ag statistics 2001. According to the Weakley County Farm Services Agency, approximately 27,000 acres of wheat was planted in 2001 with a total farm income in 2002 of roughly \$3.6 million. (27,000 x \$2.65 per bushel x 50 bushels per acre) Approximately 166 wheat producers are located in Weakley County with 87 being considered full-time farmers or producers with 1200+ acres.

WHAT HAS BEEN DONE: According to producer survey results and interviews the following are the perceived educational needs: variety demonstrations, no-till wheat versus conventional tillage, seeding rates and fertilization demonstrations and insecticide/fungicide demonstrations. Two wheat variety plots comparing 24 different varieties were harvested in 2002 and one variety plot was planted in the fall of 2002. Two seeding rate demonstrations and one no-till versus conventionally tilled demonstration was conducted. One local and two area-wide educational meetings were conducted, newsletters, phone calls, office visits and on-farm visits were conducted in promoting proper variety selection. Three educational meeting focused on improving marketing skills.

IMPACT: Producer acceptance of variety test data indicate a 96% use rate in making variety selection decisions. Producers using UT Extension variety data and selecting superior performing varieties indicate a 2.3 bushel per acre advantage over traditional varieties. Weakley County producers harvested approximately 27,000 acres of wheat and realized an additional \$155,000.00 in increased farm income by utilizing superior performing varieties.

Funding Sources: Extension Funds and private seed industry.

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TITLE: Optimizing Cotton Production

ISSUE: Haywood County produces nearly 20% of all cotton grown in Tennessee and harvested 120,000 acres of cotton in 2001 with an average yield of 752 pounds per acre. Cotton represents 69% of all crops grown in the county with a value of \$42.4 million that is returned to the local economy. Haywood County producers must optimize yield while maintaining economic feasibility of production costs.

WHAT HAS BEEN DONE: The Haywood County Adult Agriculture Agent utilized the following educational opportunities to assist producers in optimizing cotton production:

π Planted and harvested 2 demonstration plots with transgenic varieties and provided yield and quality data for those varieties

- π Planned and conducted a Variety Trial Field Day with UT specialists as educational speakers and provided a tour of the varieties
- π Provided Integrated Pest Management services for cotton producers including an educational seminar, a scouting program, local moth trap counts and control recommendations
- π Distributed weekly IPM newsletter with timely insect and production updates on the web, over e-mail, and traditional delivery methods
- π Planned and conducted a cotton defoliation trial with 10 popular combination treatments and hosted a tour for producers
- π Maintained Haywood County Extension website with up-to-date production information such as daily soil temperature readings, recommended disease and weed control information, IPM information and insect population numbers
- π Provided Marketing Teleconference training to increase producers marketing skills

IMPACT: Based on surveys distributed at the Variety Trial Field Day, over 75% of those in attendance indicated this program met their needs for information about cotton varieties and recommended production practices. Seventy-seven percent indicated it increased their knowledge of crop varieties and recommended production practices while 56% said they would definitely utilize this program's information in their operation. Through direct contact with the agent, 10 producers saved on average \$5.00 per acre on 15,600 acres on defoliation treatments for a total savings of \$78,000.00. Over 2000 acres were enrolled in the IPM program that allowed producers to eliminate a blanket pinhead application for plant bugs and only spray insects after the populations exceeded economic threshold. The projected savings on these 2000 acres was \$30,000.00.

FUNDING: Extension funds and private agribusiness funds

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TITLE: Agronomic Crop Variety Testing and Demonstrations

ISSUE: Tennessee row crop producers are faced with a wide array of choices of varieties/hybrids that will perform best in their farming operation. For example, in 2002 there were over 300 varieties/hybrids to choose from when combining corn and grain sorghum hybrids and soybean and wheat varieties available for purchase by farmers in TN. The purpose of the variety testing program is to provide producers with unbiased data on yield and agronomic traits of the varieties/hybrids so that they can make informed decisions for purchasing varieties or hybrids for their farming operation.

WHAT HAS BEEN DONE: Approximately 6200 yield test plots on 339 agronomic crop varieties of corn (95 hybrids), soybean (182 varieties), wheat (46 varieties), and sorghum (16 hybrids) were conducted on six experiment stations located in the different physiographic regions of Tennessee. Data from these trials were combined with the TN County Standard Test data (1890 test plots) on 86 corn hybrids, 24 wheat varieties, 99 soybean varieties and 11

sorghum hybrids and published on-line and in hard-copy publications. A new experiment was initiated in corn and soybeans, in collaboration with a grain crops Area Extension Specialist and several county agents, to compare the results of small plots with large strip trials by imposing small plots ex post facto onto the strip trials. The experiment will be conducted for at least one more year. An experiment was initiated to evaluate the effects of rotation of GMO crops (corn, soybean, and cotton - all Roundup Ready varieties) in combination with ground covers (hairy vetch, crimson clover, wheat, poultry litter, and fallow) on crop production and associated changes in disease and pest pressures.

IMPACT: Reader Audience: We are consistently told that the variety test publications are the most requested TAES publications by our agricultural clientele. According to the 1997 Census of Agriculture, Tennessee had 22,000 farms with sales >\$10,000 in 2001. Assuming that 50% of those are crop farms, (~ 50% of the ag income comes from crop sales), then there are ~11,000 crop farms in TN. Furthermore assuming that 3/4 of those owners review our variety test results in order to make choices of varieties or hybrids to purchase for their farming operation, then our direct reader audience in terms of crop producers would be roughly, 8,000 (according to the census 5,854 farms produced corn, 4,926 farms produced soybeans, 2,360 farms produced wheat, and 1,156 farms produced cotton). If one further assumes that our industry cooperators, extension and other public service personnel who read the agronomic crop variety tests results equal about 500, then our total reader audience per year might be around 8500.

Additional Revenue: In 2001, the difference between the highest yielding medium-season corn hybrid and the lowest yielding hybrid in that test was approximately 50 bu/A. If corn sold for \$2.50/bu, then the difference in value between the two hybrids would be \$125/A, if the producer chose the highest yielding vs. the lowest yielding to grow. In a similar manner, the difference between the highest yielding and lowest yielding soybean variety in the Roundup Ready 5 test was 12 bu/A. If soybeans are selling for \$5.50/bu, then the difference in income by choosing the highest versus the lowest yielding would be \$66/A. Likewise, in wheat the difference between the highest and lowest yielding variety was 18 bu/A. At a selling price of \$3.85/bu, the extra return would be ~\$70/A. Given that a producer was farming 1000 acres of which 500 acres were planted to medium-season corn and 500 were planted to Roundup Ready MG 5 soybeans with 250 of the soybean acres double cropped with wheat, then the producer could receive an extra \$62,500 on his corn acreage, \$33,000 from his soybean acreage, and \$17,500 from his wheat acreage (total of \$113,000 extra annual income) by using the variety test information and planting the highest yielding hybrid or variety versus the lowest yielding one that is available in the market place. If the above scenarios are followed by 50% of the corn, soybean and wheat producers in TN, then the additional income per year in cash sales in TN on the three commodities could be around \$83,650,000 (310,000 acres of corn x \$125 = \$38,750,000, 500,000 acres of soybeans x \$66/A = \$33,000,000, 170,000 acres of wheat x \$70 = \$11,900,000). The value of the relative performance of hybrids or varieties that are available for purchase in TN can have an enormous impact on our farmers' income as well as the additional flow of revenue for the State.

FUNDING: Tennessee Agricultural Experiment Station, Tennessee Agricultural Extension Service, and gifts from participating seed companies.

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TITLE: Cotton Production in Tennessee

ISSUE: Each year Tennessee cotton producers face the difficult task of choosing cotton varieties that not only provide excellent lint yields but also quality fiber characteristics. Tennessee cotton producers have been heavily discounted in the last several years for high micronaire, short staple cotton. Because of the short growing season, producers in Tennessee rely on early-maturing varieties to combat the potential for an early fall. Although the environment plays a major role in micronaire and fiber length development, these early-maturing, high-yielding varieties have the potential for discounts from high micronaire and/or short staple. Conversely, varieties that exhibit good fiber quality tend to be later maturing and lower yielding. These factors along with poor commodity prices compound the difficulty of variety selection.

WHAT HAS BEEN DONE: Cotton variety testing and on-farm demonstrations provide the growers with reliable information to aid in their production decisions. Research on variety blending may also provide much needed answers. The hypothesis for blending suggests that a high yielding, early maturing variety could be blended with some variety with better fiber quality. Therefore, fiber quality could be improved while maintaining high yields and earliness. Online cotton variety information as well as weekly newsletters provides growers with timely information for crucial decisions.

IMPACT: Choosing the correct variety can mean the difference in a profit or a loss. Shrinking profits demand high yielding, quality cotton and a few pounds of lint or a few cents discount can have tremendous effects on profits. Although variety selection may not always provide a profit, choosing the most stable variety for that particular environment minimizes risks. Choosing a variety with only 50 lbs. more yield potential and discount free fiber quality could result in more profit. Factors such as variety maturity and growth habits can also be important for management and harvesting efficiency. Timely information in weekly newsletters may provide growers with a tip that will increase the potential for a good crop.

FUNDING: Commodity funds, Company funding

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TITLE: Alternative Small Grains Production

ISSUE: Tennessee small grains producers often look for alternatives to wheat for winter grain production. Tennessee boasts a thriving horse industry that often relies on oats for high protein feed. Oat production has declined in recent years due to poor winter hardiness of some oat varieties and poor disease resistance.

WHAT HAS BEEN DONE: Oat breeding lines from Louisiana, Texas, North Carolina and Florida were planted along with popular varieties at the West Tennessee Experiment Station for evaluation of winter hardiness and disease tolerance. This evaluation along with yield data may uncover an oat line suitable for Tennessee production.

IMPACT: Discovery of an oat breeding line suitable for Tennessee production could lead to a joint variety release and the creation of a new market for Tennessee commodities. This new market could provide producers with an alternative to wheat when prices are depressed.

FUNDING: Extension

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TITLE: TENNESSEE COTTON PRODUCTION

ISSUE: For the years 1999-2001, 23 Lake County producers harvested an average of 12,500 acres of cotton. Information obtained from Tennessee Agricultural Statistics 2002 indicated the average yield for the period was 695.3 lbs/a. Utilizing the loan price of \$0.52 per pound, cotton production in Lake County would account for an average annual gross income of \$4,534,400.00 or 24.3%. In addition to these farmers, there are three ag supply dealers, three aerial crop dusting services and three scout/consultants that utilize UT Ag Extension Service information and local demonstration information to aid these farmers in crop production decisions.

WHAT HAS BEEN DONE: Through informal surveys with local producers and agri-businesses, the following goals were developed for cotton production education programs; (A) to increase yields by using the newest tested, highest yielding varieties, (B) comparison of conventional production methods vs transgenic technology. One-on-one visits with producers, local and area production demonstrations (2 conducted), producer meetings (2 conducted), demonstration yield data, University recommendations and production newsletters (12) were mailed to producers and made available at local agri-businesses. Marketing Club Network Teleconferences were utilized on a monthly basis to inform producers of market outlook and marketing strategies.

IMPACT: Utilizing data from the 2002 Standard Cotton Variety Demonstration results indicated a difference of 103 lbs/a when comparing the top two Roundup Ready/Boll Gard varieties to the bottom two varieties. 100 percent of the cotton acreage in Lake County is planted to transgenic varieties. If 50% of the 80% allowable BG (Boll Gard) cotton was planted to the top two tested varieties, producers could expect an extra \$53.00/a (103 lb/a x \$0.52/lb) in gross income. This would amount to \$265,000.00 (\$53.00/x 5000 A) in extra gross income in the county. Review of the yield data comparing the Roundup Ready (RR) varieties indicated only a 19 lb/a difference between the top two varieties when compared to the bottom two. This would indicate little benefit to variety selection of RR varieties for the refuge. However, the refuge accounts for 20% of the acreage planted. When comparing the straight RR varieties to the non-transgenic,

conventional, varieties, there is 78 lb/a yield advantage in the overall average of the conventional varieties compared to the overall average of the RR varieties. The difference is more pronounced when you compare the RR varieties overall average to the top three conventional varieties tested. This difference is 125 lbs/a or \$65.00/a (125 lb/a x \$0.52/lb). Planting all the refuge to top three conventional varieties would amount to an extra \$162,500.00 (12,500a x 20%) x \$65.00/a) of gross income in the county. However, due to weed pressure and the ease of raising RR cotton, this extra money will probably not be realized.

In addition, the first year of a multi-year potassium demonstration was conducted in cotton. Potash treatment rates were 0,30,60,90 and 120 lbs/a. Each treatment was replicated three times. Soil test indicated the field had a medium test for potassium. The demonstration was initiated to determine if extra potassium would help in yield and grades of cotton. First year data indicated a \$21.96/a difference between all of the treatments. The 0 lbs/a potash resulted in the greatest gross income of \$533.03/a while the 30 lbs/a potash resulted in the lowest gross income of \$511.07/a . According to first year data a medium testing soil in potassium is adequate for maximizing gross profit in cotton production. This demonstration is scheduled to be conducted for the next 5 years with yield results being obtained on whatever crop is grown.

FUNDING: Extension funds, private seed and chemical company representatives, local agri-businesses and demonstration cooperators (farmers).

GOAL 2: A safe and secure food and fiber system.

Overview

Major program/research areas included under Goal 2 of the Tennessee Agricultural Research and Extension System Plan of Work included: food safety, and food quality. The following describes the projects and programs conducted by the UT Agricultural Experiment Station, the UT Agricultural Extension Service and the TSU Cooperative Extension Program in addressing these areas. More specific information related what was done and what impacts were achieved in each area is included under the Key Theme section.

Food Safety:

Over \$4 million dollars in extramural funding has been obtained to conduct research, prepare educational programs and teach food safety in Tennessee since the Food Safety Center of Excellence was established by the University of Tennessee in December 2000, as part of the university's 21st Century Research Initiative. The Center provides information to consumers, scientists and government agencies, assists Tennessee companies in developing new food safety technologies and in obtaining funding for innovative technology.

In 2001-2002, food safety education for consumers was provided through two programs that target limited resource audiences, the Expanded Food and Nutrition Education Program (EFNEP) and Tennessee Nutrition and Consumer Education Program (TNCEP). In the EFNEP program, 6,592 adults and 21,582 youth received food safety education with the following results: 65% (2,732) of 4,204 adults surveyed showed improvement in one or more food safety practices and 98% of 19,560 youth surveyed improved practices in food preparation and safety. Twenty-seven percent (1,124) of adults no longer left perishable foods at room temperature for more than two hours. Sixty percent (2,506) of adults began thawing frozen foods using recommended practices. In the TNCEP program, 49,386 adults and youth received food safety education. Over 95% (47,106) of participants reported their intention of washing their hands before and after handling food. One hundred percent (16,969) of individuals surveyed reported they would cook foods to a safe temperature; 99% (15,725) of 15,819 intended to separate raw, cooked and ready-to-eat foods while storing and preparing foods; 100% (16,668) of those surveyed intended to refrigerate perishable food promptly; and 100% (13,480) intended to preserve food safely.

Special food safety programs have also been developed for hospital and nursing home workers, child care providers, food workers, and managers, including Tennessee Department of Agriculture inspectors, as well as other consumers and food handlers. These programs educated participants about food safety issues and provided knowledge and skills to improve food handling and reduce food borne illnesses.

The program in Food Chemistry and Biophysics (<http://cifs.utk.edu>), has joined forces with the departmental Food Microbiology program to develop new and better antimicrobials to be added

to foods to ensure their safety over a prolonged period of time. While researchers are still in the early stages of the research, their studies have already had direct applicable results and impacts. The newly developed antimicrobials have the potential to significantly improve the safety of the US food supply.

The University of Tennessee is part of a team of scientists, including those from other universities, the USDA, and private industry, working together to produce better soybeans. We have developed higher oleic soybeans and low linolenic soybeans which should produce healthier, more stable soybean oil.

Researchers have conducted studies to determine the effects of husbandry practices on antibiotic resistance in bacteria associated with livestock in an attempt to address the concern for the growing number of antibiotic-resistant bacteria. The information derived from these studies will provide much-needed guidance in the development of intervention strategies, husbandry practices, and therapeutic treatments to maintain animal health while at the same time reducing the risk of antibiotic resistant pathogens.

New methodology for detection of disease-causing bacteria was developed at The University of Tennessee using PCR combined with conventional methodologies which will permit more accurate and more rapid diagnosis of food borne illnesses and which will quickly identify animals contaminated with food borne pathogens. These discoveries will not only make the food supply safer but will provide tools to help manage agrosecurity and assist producers in removing contaminated animals from herds and breeding facilities.

There are many natural compounds in the World that have been used since ancient times to assist in control of various human diseases. Some of these compounds may be useful as additives to control the growth of disease-causing microorganisms in foods. While many Western-style spices and herbs have been tested for antimicrobial activity, less is known about Asian spices. The results of our studies have demonstrated that certain Asian spices have very good potential to inhibit certain pathogenic microorganisms in foods, including *Listeria monocytogenes* and *Salmonella*. One of the major problems associated with use of all naturally occurring food antimicrobial is that they have significantly reduced activity in food products. Data gathered thus far in ongoing projects indicates that the use of metal binding agents and encapsulating agents may be able to overcome some of the loss of effectiveness of these antimicrobial and assist in controlling growth of or inactivating disease-causing microorganisms in foods.

The Tennessee Beef Quality Assurance (BQA) Certification Program that was initiated in February, 2000 continues to grow. Currently 1447 producers have received their BQA certification since the start of the certification program. A total of 419 producers have become certified in 2002. Cattle managed according to BQA guidelines have been marketed at one feeder calf sale for three years, the Wilson Livestock Network Video Sales, the Lower Tennessee Cattlemen's Association Board Sales and Superior Livestock Satellite Sales. The BQA Guidelines have been adopted by the Beef Advantage Program developed by Tennessee Farmers Cooperative plus the health and marketing programs developed by Pfizer and Merial

Animal Health Companies. Six Beef Advantage sales have been held in the year 2002 with additional ones already scheduled for 2003. Cattle with BQA Certification and a defined health program marketed at these sales have sold for an average of \$3.00 to \$5.00 per hundred more than comparable cattle sold a weekly auctions the same week.

Allocations for Goal 2 Projects and Activities:

UT 1862 Research:

- Hatch - \$410,937
- Multistate - \$68,783
- Animal Health - \$34,700
- State Outlays - \$4,225,092

UT 1862 Extension:

- Smith-Lever b and c - \$162,230
- State and County Allocations - \$610,921
- Smith-Lever d - \$215,627

TSU 1890 Extension:

- Smith-Lever b and c - \$301,676
- State and Local Allocations - \$0

FTE's for Goal 2:

UT 1862 Research - 7.7

UT 1862 Extension - 7.2

TSU 1890 Extension - <unavailable at time of printing>

KEY THEME - FOOD SAFETY/HACCP/FOOD HANDLING

TITLE: Safe Food for Families

ISSUE: Foodborne illness, disease transmitted to people by food, has both health and economic consequences. An estimated 76 million people in the United States become ill, 325,000 people require hospitalization and 5,000 die each year as the result of foodborne illness. Five major pathogens alone cost at least \$6.9 billion annually due to medical costs, productivity losses from missed work, and an estimate of the value of premature deaths.

WHAT HAS BEEN DONE: In 2001-2002, food safety education for consumers was provided through two programs that target limited resource audiences, the Expanded Food and Nutrition Education Program (EFNEP) and Tennessee Nutrition and Consumer Education Program (TNCEP). In addition, education was provided to other audiences that included members of 4-H and Family and Consumer Education (FCE) organizations. Food preservation training was conducted for consumers who wanted to preserve foods safely at home.

IMPACT: In the EFNEP program, 6,592 adults and 21,582 youth received food safety education with the following results: 65% (2,732) of 4,204 adults surveyed showed improvement in one or more food safety practices and 98% of 19,560 youth surveyed improved practices in food preparation and safety. Twenty-seven percent (1,124) of adults no longer left perishable foods at room temperature for more than two hours. Sixty percent (2,506) of adults began thawing frozen foods using recommended practices.

In the TNCEP program, 49,386 adults and youth received food safety education. Over 95% (47,106) of participants reported their intention of washing their hands before and after handling food. One hundred percent (16,969) of individuals surveyed reported they would cook foods to a safe temperature; 99% (15,725) of 15,819 intended to separate raw, cooked and ready-to-eat foods while storing and preparing foods; 100% (16,668) of those surveyed intended to refrigerate perishable food promptly; and 100% (13,480) intended to preserve food safely.

FUNDING: USDA Smith Lever 3(d) funds, Extension Base Program funds, Tennessee Department of Human Services nutrition education funds, Tennessee Department of Human Services community education funds (Cooking School)

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TITLE: Better Process Control Schools

ISSUE: The US Food and Drug Administration requires that all persons operating retorts in low acid canned food operations or anyone processing foods that are acidified successfully complete a Better Process Control School. These schools are approved by FDA and are offered by universities in cooperation with the National Food Processors Association.

WHAT HAS BEEN DONE: Five Better Process Control Schools were conducted in 2002, four for low acid canning and one for acidified foods. Ninety-seven food processing personnel and managers, including ten Tennessee Department of Agriculture Inspectors, participated in these programs. A grant was received from the FDA to conduct the Acidified Better Process Control School for Tennessee Department of Agriculture Inspectors and small-scale acidified food processors.

IMPACT: For the Acidified Better Process Control School, because it was subsidized by FDA, we were able to allow small businesses and Inspectors to participate when they might not otherwise have been able to afford the workshop. This allowed the food manufacturers to produce

a safe product and comply with the law. The population that these companies provide food to is, conservatively 10,000,000. If the food safety program reduced the potential incidence of food borne illness by 1 in 1000, approximately 10,000 cases of food borne illness was prevented.

FUNDING: Agricultural Extension Service, Food and Drug Administration, SlimFast, Corporation, ConAgra Corporation, National Food Processors Association, Participant fees

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TITLE: Food Safety Certification Workshops for Hospital and Nursing Home Workers

ISSUE: Hospital and nursing home food service employees require continuing education in the area of food safety so that they are aware of current issues and recommended practices.

WHAT HAS BEEN DONE: Two Food Safety Certification workshops were conducted for forty-four food service workers that serve approximately 7500 at-risk individuals (East Tennessee Children's Hospital, Knoxville and East Tennessee area hospitals, area nursing homes and care centers). Impact: forty-two (96%) of the food service workers received certification based upon achieving a 70% or higher on a post-training examination. The percentage improvement between an examination given prior to the certification course and a post-examination was 36%. If the food safety training reduced the incidence of foodborne illness by 1 in 1000, we would have prevented a minimum of 8 serious illnesses or deaths.

FUNDING: Agricultural Extension Service, East Tennessee Children's Hospital, Participant fees

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TITLE: Tennessee Food Safety Task Force

ISSUE: There was no single organization or unit in the State of Tennessee that served as a liaison for regulatory agencies involved with food processors and agriculture, the food service and processing industries and academia.

WHAT HAS BEEN DONE: A task force was organized by the Tennessee Department of Agriculture, US Food and Drug Administration and The University of Tennessee aimed at bringing the many diverse constituents together who have an interest in food safety. It is geared toward improving the education of the public and food handlers and managers in food safety. It is also aimed at helping to better define the roles of federal, state and local food regulatory agencies in striving for uniformity in the regulations they enforce. The first conference was held in Nashville in October 2002.

IMPACT: This is the first time that food processing regulators and food processors or those involved in food processing have met face to face. Since it was the first meeting, no impacts have been measured to date.

FUNDING: Agricultural Extension Service, US FDA, Tennessee Department of Agriculture

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TITLE: Food Safety for Child Care Providers

ISSUE: Infants and children comprise a large proportion of the population that are at-risk for foodborne illness. This is because their immune systems are not fully developed making them more susceptible to illnesses such as listeriosis, salmonellosis or hemolytic uremic syndrome. Child care facilities may play a large role in either preventing or spreading foodborne illness. Food service personnel in these facilities need the most current food safety and food handling information to be able to best prevent foodborne illnesses in their facilities.

WHAT HAS BEEN DONE: A program was initiated to develop educational food safety materials for child care facility foodhandlers. This project was funded by the University of Tennessee Food Safety Center of Excellence and was done in collaboration with faculty in the College of Education, Health and Human Sciences (Costello, Haughton). In the first part of the study, a survey was done of the types of food safety education and requirements that existed for child care facilities. The next part of the program was to organize two focus groups with child care facility directors and cooks. This assisted the project team in understanding the current status of and problems associated with food safety in child care facilities. As a part of the focus groups, a food safety workshop was presented to 45 personnel in child care facilities throughout East Tennessee.

IMPACT: The impacts of this project are twofold. First, 45 child care food handlers were educated on food safety. If they serve facilities with 25 children each, and we reduced the chances that they would cause a foodborne illness by 1:1000, we prevented approximately 11 children from having a serious foodborne illness. Secondly, a proposal is being prepared for the USDA Integrated Research, Education and Extension Grants Program for 2003. If we are successful, we will bring in a large grant to the Institute of Agriculture and Extension Service. If we are successful in obtaining grant funding, the impact will be that we will develop food safety educational materials for child care facilities which will further reduce the chances of foodborne illness in these facilities.

FUNDING: Agricultural Extension Service, UT Food Safety Center of Excellence

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TITLE: Better Process Control Schools

ISSUE: The Food and Drug Administration requires all retort operators to successfully complete the Better Process Control School for the production of safe low acid and acidified canned foods.

WHAT HAS BEEN DONE: Five Better Process Control Schools were conducted in 2002, four for low acid canning and one for acidified foods. Ninety-seven food workers and managers, including ten Tennessee Department of Agriculture Inspectors, participated in these programs.

IMPACT: The population that these companies provide food to is, conservatively 10,000,000. If the food safety program reduced the potential incidence of food borne illness by 1 in 1000, approximately 10,000 cases of food borne illness was prevented.

FUNDING: Participant fee based programs, Slimfast Corp. ConAgra, Food Processors Institute

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TITLE: Food Safety Training for Food Service Workers for "At Risk" Populations

ISSUE: Hospitalized children and the elderly in nursing homes are considered two segments of our population that are considered high risk for contracting food borne illness and are the most likely to die.

WHAT HAS BEEN DONE: Two Food Safety Certification workshops were conducted for forty four food service workers that serve approximately 7500 at-risk individuals (Children's Hospital and nursing homes and day care centers).

IMPACT: The population that these food service workers prepare food for is approximately 7500 "at-risk" individuals and if the food safety program reduced the potential incidence of food borne illness by 1 in 1000, eight cases of food borne illness was prevented. Pre and post test scores reflected a 37.4% improvement (12.1 vs 21.5 out of 25) upon completion of the workshop.

FUNDING: Fee based program, Childrens Hospital, Agricultural Extension Program

#

TITLE: Food Safety Programs for Fresh and Minimally Processed Fruits and Vegetables

ISSUE: Fresh produce ranks just after seafood and beef as the leading source of food-borne illnesses. With the shift from processing and wholesale markets to on-farm retail sales of fresh and minimally processed fruits in Tennessee, producers are having to shoulder a much higher responsibility for food safety than ever before.

WHAT HAS BEEN DONE: Additional training in apple cider safety has been conducted with producers to comply with FDA regulations. Consultations have been held to develop documentation verifying Good Agricultural Practices and for the development of HACCP plans.

IMPACTS: Many buyers are requiring that producers either submit to an audit of their Good Agricultural Practices or furnish proof of and acceptable HACCP plan before they will consider purchasing fresh or minimally processed fruits. In addition, the creation of such documentation is of value to growers in scrutinizing and upgrading their food safety practices, thus assuring a safer food supply for consumers.

FUNDING: Extension

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TITLE: Economic Analyses of Consumer Food Safety and Nutrition

ISSUE: Access to safe food is essential for people to live active and healthy lives. Each year, food borne pathogens cause as many as 76 million cases of food borne disease in the United States, including 5,200 deaths. A significant portion of the USDA funding for food safety is directed toward consumer education. Educating consumers requires targeting consumers with certain profiles, and this in turn requires an understanding of which consumers are aware of food safety and health risks and what characteristics, attitudes, and information sources are associated with their behavior and how consumers respond to emerging food safety issues such as those related to biological and chemical contamination, genetically modified organisms (GMOs), food additives, and nutraceuticals, etc. A recent national survey indicates that 10.5 percent of U.S. households (or 11 million) were uncertain of having, or unable to acquire, sufficient food to meet their needs due to a lack of financial or other resources. The primary governmental response to this deficiency is the Food Stamp Program (FSP). Improving the quality of life for the food-insecure population requires a careful analysis of their dietary behavior. With so much of the nation's food assistance resources distributed by the FSP, it is essential that policy makers have sufficient tools for assessing program participation and for assessing the impacts of food stamps on the quality of diets of program participants.

WHAT HAS BEEN DONE: The first two months of the project were devoted to investigation of American consumers' awareness of and concern about two important food safety issues: pesticide residues and antibiotic residues in food. Analysis results from a 1998 national survey, suggest that gender, age, amount of food handling information, education, income, number of adults in the household, marital status, presence of children, ethnicity and race all play important roles in consumer awareness of the two food safety issues. However, fewer socioeconomic factors influence the level of concern among those who were aware of the issues and the influences are less pronounced. Female consumers were generally more concerned about the two food safety issues, particularly pesticide residues. So were those who, for food safety reasons, bought organic food or peeled the skin off fruits and vegetables before serving.

IMPACT: Findings of consumer awareness and perceptions about pesticide residues and antibiotic residues in food are useful for federal and state agencies in targeting the population for food safety education.

FUNDING: Hatch Act

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TITLE: Investigation of physicochemical properties of food colloids and biopolymers and their relationship to food processing and microbiology

ISSUE: The importance of ensuring the safety of the US food supply has increased dramatically over the past 2 years due to the rise in international terrorism. Bioterrorism poses a threat to all US and Tennessee citizens and it is therefore critical to develop methods that can prevent the spread of deadly diseases via the food supply chain. The addition of contaminants to foods may not only happen in the food manufacturing facilities but more likely will occur at a later stage while the food is transported through the supply chain to the distributors, the supermarkets. Preservation methods such as heat treatment and irradiation are highly efficient methods to kill pathogenic microorganisms during the processing of food, but these methods are not able to reduce microbial contamination should it occur at a later stage. New technologies are needed that can protect food *in-situ*, that is ensure food safety even after it has left the food manufacturing facility and is transported through the supply chain.

WHAT HAS BEEN DONE: The program in Food Chemistry and Biophysics (<http://cifs.utk.edu>), has joined forces with our departmental Food Microbiology program to develop new and better antimicrobials to be added to foods to ensure their safety over a prolonged period of time. Food antimicrobials are chemical additives that can kill or inhibit the growth of pathogenic microorganisms. At present, almost all available food antimicrobials have low activities, that is large concentrations of antimicrobials have to be added to foods to prevent growth of pathogens. We hypothesized that activities of these compounds are low, because of problems associated with the delivery of these compounds. For example, many antimicrobials have low water solubilities and therefore low concentrations in the water-rich phase of foods where pathogens primarily grow. Thus, if antimicrobials were more efficiently delivered to the pathogens they would have higher activities. We therefore developed two new delivery techniques that dramatically improved solubility of antimicrobials by a factor of more than 100. Antimicrobials were added to phospholipids or emulsifiers. Subsequent mixing under high shear caused small nanocapsules to be formed. These capsules had sizes in the range of 50-100 nanometers that contained antimicrobials in their interior. The capsules were completely water soluble and proved to be thermodynamically stable. Application of these capsules to contaminated samples containing pathogens effectively inhibited growth and in some cases even killed pathogens demonstrating the inhibitory activity of these new antimicrobial nanocapsules.

IMPACT: While we are still in the early stages of the research, our studies have already had direct applicable results and impacts. The newly developed antimicrobials have the potential to

significantly improve the safety of the US food supply. Firstly, much smaller concentrations are needed in comparison to traditional antimicrobials to inhibit growth of pathogens which results in cost reduction for food manufacturers. Secondly, application of these capsules is easy, they can be simply added as an additional ingredient during the food formulation. The antimicrobial nanocapsules are therefore of particular interest to smaller food manufacturers that need to produce safe food but cannot afford expensive preservation processing equipment such as irradiation or heating units. Thirdly, the development of these more efficient antimicrobials opens the door to the development of a completely new class of food products, foods that are minimally processed but are shelf stable thereby improving their quality. Finally and most importantly, the nanocapsules offer a method to protect food *in-situ* and may therefore prove to be applicable as a preventative measure against a Bioterrorism attack on foods. The project was conducted in collaboration with the UT Food Safety Center of Excellence and other national academic institutions, highlighting the growing reputation of the University of Tennessee as a premier outcome-oriented research institution.

FUNDING: Hatch Act, Local (Describe): Food Safety Center of Excellence

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TITLE: Nutrition-Environmental Temperature Interaction in Poultry

ISSUE: Economic losses associated with the detrimental effects of heat stress on poultry production are substantial. This research seeks to identify nutritional modulations and management strategies that are important in dealing with this problem. Findings generated from this research are important to producers, industry groups and research scientists.

WHAT HAS BEEN DONE: Evaluated growth performance and immune tissue morphology response of heat-distressed broilers fed diets supplemented with zinc amino acid complex, vitamin E and different dietary fat sources.

IMPACT: Addition of supplemental organic zinc to broiler diets formulated with soybean oil instead of animal fat improved the weight gain. Spleen weight improved in birds receiving supplemental organic zinc indicating a possible enhanced immune response. Broilers make up 17 percent of Tennessee's total cash receipts. The success of this study will yield higher economic rewards due to the improved health of the broilers.

FUNDING: Hatch Act

#

TITLE: Genetic Enhancement of Health and Survival for Dairy Cattle

ISSUE: The dairy industry contributes over 215 million dollars of Tennessee's total cash receipts, which makes up 10 percent of the state's total cash receipts. Dairy producers and

consumers will benefit from the enhancement of health and survival of dairy cattle. Consumers will save millions of dollars on the cost of milk and dairy products each year, and the accumulated improvement in disease resistance over several years will lead to dramatic savings in costs associated with metabolic diseases in dairy cattle.

WHAT HAS BEEN DONE: Heritabilities of body condition score (BCS) and genetic correlations among BCS, dairy form, stature, strength and final score were estimated from over 200,000 cows using data from Holstein Association USA. Body condition score is heritable (heritability around 0.22) and genetically correlated with dairy form (-0.72) and strength (0.69). Body condition score had a genetic correlation with final score near zero (0.08). Genetic correlations among diseases, BCS, dairy form and strength were also estimated using Holstein Association USA data and health data collected by Genex/CRI. Body condition score and dairy form were significantly correlated with both displaced abomasums and metabolic diseases. Strength was significantly correlated with metabolic disease (-0.61), but the partial correlation coefficient between strength and metabolic disease was positive (0.22) after adjustment for BCS. Selection for increased BCS or reduced dairy form may reduce displaced abomasums and metabolic diseases. Heritabilities for milk urea nitrogen (MUN) were estimated from data collected through the Dairy Records Management Systems in Raleigh, NC. Data from over 50,000 cows in first lactation and 40,000 cows in second lactation were used in the analyses. Heritabilities were around .20 to .25 for infrared data and around .10 to .20 for wet chemistry data. Heritability estimates tended to be higher in first lactation than second lactation. Milk urea nitrogen levels could be changed by selection.

IMPACT: Selection for higher body condition scores along with the current selection for increased milk yield in dairy cattle will reduce metabolic diseases and increase the efficiency of producing milk. Although selection for increased body condition scores would not produce a rapid decline in metabolic diseases in dairy cattle, the accumulated improvement in disease resistance over several years will lead to dramatic savings in costs associated with metabolic diseases in dairy cattle. As a result, consumers in the US will save millions of dollars in the cost of milk and dairy products each year.

FUNDING: Hatch Act, Commodity (Describe):Dairy industry

#

TITLE: Higher Oleic and Reduced Trans-fat: Healthier Soybean Oil

ISSUE: The FDA will soon require all food processors to list the levels of *trans-fats* on all food labels. Hence processors are actively searching for suitable sources of vegetable oil for their products. USA soybean exports and commodity prices have plummeted in recent years. The development of healthier soybeans will stimulate demand by health-conscious consumers and improve market-share. Soybean is a major agricultural crop with diverse human and animal nutritional uses. The development of better soybeans will benefit soybean farmers, processors, and consumers.

WHAT HAS BEEN DONE: The University of Tennessee is part of a team of scientists, including those from other universities, the USDA, and private industry, working together to produce better soybeans. We have developed higher oleic soybeans and low linolenic soybeans which should produce healthier, more stable soybean oil.

IMPACT: The recent development of new soybean populations with exceptionally low levels of linolenic acid will ultimately help processors reduce the need for hydrogenation and lower the level of *trans* fats to meet new FDA food labeling regulations. The development of higher oleic soybeans will provide health-conscious consumers with a healthier vegetable oil and will provide processors with the stable type of soybeans that they currently need. Better USA soybeans may improve exports, reduce domestic stocks, and improve the commodity price that farmers need to sustain their livelihoods.

FUNDING: Hatch Act, Commodity (United Soybean Board - Better Bean Initiative; Tennessee Soybean Promotion Board)

#

TITLE: Post-harvest Quality and Safety in Fresh Cut Vegetables and Fruits

ISSUE: The safety and quality of fresh-cut vegetables and fruits is important to consumers who want a safe, high quality fresh product and are trying to eat more fruits and vegetables but also want a convenient product that can be consumed with little or no preparation required. It is also important to the fresh-cut produce industry who are required to produce a safe product without any heating step in the process or preparation. There are many smaller operations since a number of these products are produced and distributed within specific regions of the U.S. and do not require large quantities to be profitable and these smaller operations do not have the resources or personnel to investigate new technologies related to the safety and quality of fresh-cut produce. This information is also important for food science and technology students to be aware of new technologies and the impact on fresh-cut produce.

WHAT HAS BEEN DONE: Fresh-cut sliced tomatoes have been treated with ozone gas to reduce the microbial population and then evaluated for lycopene and ascorbic acid contents and color changes during the ozone treatment

IMPACT: Ozone can be used to control microbial populations and extend the shelf life of fresh-cut produce such as slice tomatoes, pre-cut salads, cantaloupe and fruit juices to produce a safer and higher quality product. The increase in shelf life can reduce spoiled product and increase profitability between 20 to 50%. The disadvantage is the oxidation of nutrients within the produce. Our research found that Ascorbic acid content within sliced tomatoes or tomato juice would be decreased using treatments necessary to reduce microbial populations however lycopene content within the sliced tomatoes would not be significantly affected. Ozone would, therefore, be acceptable to use as a treatment for produce that was not intended as a significant source of ascorbic acid.

FUNDING: Hatch

#

TITLE: Determining Effects of Husbandry Practices on Antibiotic Resistance in Bacteria Associated with Livestock

ISSUE: Concerns regarding the growing number of antibiotic-resistant bacteria in our environment continue to increase. Medical health experts point to the extensive use of antibiotics in humans and livestock as the primary reason for the increased prevalence of these resistant strains. Bacteria of concern include various strains of enterococci and staphylococci, which can cause life-threatening infections following routine surgeries, and food borne agents, including salmonella and *E. coli*. All of these bacteria have shown an ability to acquire resistance genes making them difficult to control through antibiotic therapies. In order to minimize the prevalence of resistant bacteria coming from farm environments, it is important to examine the effects of various management and husbandry conditions on livestock and the bacteria that are associated with them.

WHAT HAS BEEN DONE: Through our research activities we determined the effects of antibiotic dosing schemes, various husbandry practices and exposure of breeding stock to antibiotics on bacteria and the genes associated with antibiotic resistance. From that work, we have characterized the best practices to limit antibiotic resistance, reduce food borne pathogens, and to maintain animal health and economic benefits afforded by antimicrobials. We have also determined which stages of livestock are most likely to carry antibiotic resistant bacteria, and are currently characterizing possible routes of transfer of these organisms from livestock to surrounding areas, orchards, vegetable gardens and aquaculture systems.

IMPACT: The information derived from these studies will provide much-needed guidance in the development of intervention strategies, husbandry practices, and therapeutic treatments to maintain animal health and production while concurrently reducing the risk of antibiotic resistant pathogens and naturally occurring bacteria that may act as sources of resistance genes. Such information can be disseminated through outreach activities of Extension and commodity organizations, and other agencies in direct contact with producers and processors. Additionally, this research will demonstrate a concerted effort to address issues of concern to consumers, thereby increasing the acceptance and confidence in agricultural products and increasing market potential both domestically and abroad.

FUNDING: Hatch Act, Animal Health and Disease

#

TITLE: Irradiated Ground Beef: The Adoption Decision by Supermarkets and Grocery Stores

ISSUE: Recently irradiation of red meat products was approved at the federal level. Irradiation

can help reduce the incidence of food borne pathogens in red meats. However, retailers and consumers may have concerns about the safety of the irradiation process and how the products will be labeled.

WHAT HAS BEEN DONE: A survey of 40 Knoxville Tennessee area supermarket retail meat managers was conducted.

IMPACT: Retail supermarket meat managers do not foresee irradiated red meat products coming to their stores soon. However, when these products arrive, they believe the first product will be irradiated ground beef. Meat managers believe consumers may have mixed views on the safety of irradiated red meat products.

FUNDING: Hatch Act, National Research Initiative, Other (USDA Forest Service, WERC FastTrack Grants Program)

#

TITLE: Ecology, Inactivation, and Control of Food borne Pathogens

ISSUE: The ecology and control of food borne pathogens on food commodities is an issue of importance to food producers, processors, distributors, and consumers. Information regarding the occurrence and survival of, and intervention strategies for controlling pathogens on foods can be applied to enhance food safety, reduce economic loss from contaminated foods, and reduce the incidence of food borne illness.

WHAT HAS BEEN DONE: Fully-processed frankfurters were inoculated with *Listeria monocytogenes*. After 24 hours, the surface of the frankfurter was treated with a lactic acid (0, 0.5 and 1.5%) dip for 10 seconds. Frankfurters were then vacuum packaged and treated with 85°C steam for 0, 1, 2 or 4 minutes. The effect of these treatments on survival of *L. monocytogenes* was determined.

Cantaloupes were inoculated with *Salmonella* and treated with chemical sanitizers, ozonated water, steam, and ozone/steam combinations. The effects of these treatments on survival of *Salmonella* was determined.

IMPACT: In-package pasteurization of frankfurters is a promising treatment that can eliminate *L. monocytogenes* on processed frankfurters. This treatment would allow for an effective listericidal treatment that is not conducive to post-processing contamination, thereby leading to safer products for consumers.

Steam pasteurization of cantaloupes, in conjunction with washing with ozonated water, effectively destroys *Salmonella* on cantaloupe rinds. These treatments can be done inexpensively, cause no adverse effects on cantaloupe quality, and provide consumers with safer products.

FUNDING: Hatch Act, Other (Describe): Sara Lee, Corp., Food Safety Center of Excellence

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TITLE: Improving Efficiency of Cloning by Somatic Cell Nuclear Transfer

ISSUE: Improving efficiency of cloning adult animals using somatic cell nuclear transfer will hasten availability of cloning procedures to livestock producers for purposes of cloning genetically superior farm animals. Moreover, given the ease most somatic (body) cells can be grown and genetically modified in the laboratory, use of cloning procedures will become ideal for producing genetically modifying farm animals for the purpose of producing pharmaceuticals or organs for the human population.

WHAT HAS BEEN DONE: With the birth of Millennium and now Emma (<http://web.utk.edu/~taescomm/utcloneproject>), our research reaffirms that one does not have to induce somatic cells into a “quiet” state before using to clone an adult animal.

IMPACT: Livestock in Tennessee makes up over 50 percent of the state’s total cash receipts. Use of proliferating somatic cells for the purpose of cloning adult animals demonstrates that cloning procedures are more straightforward than previously thought. Applying the cloning procedures will enable livestock producers to create genetically superior livestock and modify farm animals for the purpose of producing pharmaceuticals or organs for the human population.

FUNDING: Hatch Act

#

TITLE: Detection of food borne pathogens through novel technology

ISSUE: Researchers, Food Producers and Processors, Regulatory, Government Agencies and educators will benefit from the new methods of detecting disease-causing bacteria.

WHAT HAS BEEN DONE: New methodologies for detection of disease-causing bacteria have been developed at The University of Tennessee using molecular microbiology combined with conventional methods.

IMPACT: New methodology for detection of disease-causing bacteria was developed at The University of Tennessee using PCR combined with conventional methodologies which will permit more accurate and more rapid diagnosis of food borne illnesses and which will quickly identify animals contaminated with food borne pathogens. These discoveries will not only make the food supply safer but will provide tools to help manage agrosecurity and assist producers in removing contaminated animals from herds and breeding facilities.

FUNDING: Special Research Grants, State (Describe): Food Safety Center of Excellence

#

TITLE: Food Safety Center of Excellence

ISSUE: The University of Tennessee Food Safety Center of Excellence's activities involve research, teaching, extension and educational activities for the general public to become educated about food safety..

WHAT HAS BEEN DONE: Over \$4 million dollars in extramural funding has been obtained to conduct research, prepare educational materials and teach food safety in Tennessee.

IMPACT: The University of Tennessee Food Safety Center of Excellence provides information to consumers, scientists and government agencies, assists Tennessee companies in developing new food safety technologies and in obtaining government funding for innovative technology through small business innovative technology proposals. The Center provides research-based recommendations and resources to assure that Tennesseans are provided the safest food in the world and the knowledge needed to keep it that way.

FUNDING: State (Describe): Food Safety Center of Excellence

#

TITLE: Geographic Information System (GIS) and Listeria from cows, calves and farm environments

ISSUE: This is a system which will greatly improve our ability to conduct risk assessment of on-farm contamination and the spread of food borne pathogens. It will benefit regulatory agencies, public health and researchers.

WHAT HAS BEEN DONE: A GIS model is being developed for Salmonella, Campylobacter, E. Coli O:157 and Listeria from farm animals and environmental samples.

IMPACT: GIS (Geographic Information System) is being used to analyze data from 16 locations throughout the United States on the occurrence of food borne disease-causing bacteria in animal and human populations. This project will permit scientists to rapidly and quantitatively assess food borne disease outbreaks, respond to outbreaks, communicate findings quickly and identify most probable sources of microorganisms causing food borne diseases.

FUNDING: Special Research Grants

#

TITLE: Developing Antimicrobial Delivery Systems to Improve Food Safety

ISSUE: If the project has success, methods will be available for the food industry to reduce the incidence of disease causing microorganisms in foods. This will benefit consumers, the food industry and food industry regulators.

WHAT HAS BEEN DONE: The primary objective of projects on preservatives (antimicrobial) in foods is to allow expanded use of naturally occurring food antimicrobial to improve microbiological safety of these products. This could be used to control or inhibit growth of pathogens (disease-causing microorganisms) in foods such as *Salmonella*, *Escherichia coli* O157:H7 or *Listeria monocytogenes*. Thus far we have demonstrated that certain Asian spices are effective at reducing the growth of several pathogenic bacteria in milk. In addition, we have shown that certain food grade compounds that tie up minerals may enhance the anti-bacterial activity of naturally occurring antimicrobial. Finally, we have shown that certain naturally occurring antimicrobial retain activity even if they are encapsulated.

IMPACTS: There are many natural compounds in the World that have been used since ancient times to assist in control of various human diseases. Some of these compounds may be useful as additives to control the growth of disease-causing microorganisms in foods. While many Western-style spices and herbs have been tested for antimicrobial activity, less is known about Asian spices. The results of our studies have demonstrated that certain Asian spices have very good potential to inhibit certain pathogenic microorganisms in foods, including *Listeria monocytogenes* and *Salmonella*. One of the major problems associated with use of all naturally occurring food antimicrobial is that they have significantly reduced activity in food products. Data gathered thus far in ongoing projects indicates that the use of metal binding agents and encapsulating agents may be able to overcome some of the loss of effectiveness of these antimicrobial and assist in controlling growth of or inactivating disease-causing microorganisms in foods.

FUNDING: Hatch Act, Local (Describe): University of Tennessee Center of Excellence in Food Safety

#

TITLE: HACCP (Hazard Analysis Critical control Point) For Cantaloupe Producers

ISSUE: Cantaloupe has been sited in several food borne outbreaks as the carrier or source of E.coli 0157:H7. For these producers to continue to to sell to a large retailer, they were required to develop a HACCP plan.

WHAT HAS BEEN DONE: With the producers assistance, I developed and wrote a plan so they could continue to sell to this large retailer.

IMPACT: The impact of this effort is that 1,200,000 cantaloupe are being sold at the retail level for an average price of about \$1.34 per melon or \$1,608,000. If we conservatively reduced the potential incidence of food borne illness by only 1 in 1000, approximately 1200 cases of food

borne illness were prevented in 2002.

FUNDING: Extension funds

KEY THEME - FOOD QUALITY

TITLE: Functional and bioactive carbohydrates

ISSUE: Research on isolation, characterization, and application of functional and bioactive polysaccharide chitosan has been established. Chitosan was tested as an antimicrobial additive in model food emulsions and in the form of antimicrobial films and coatings. In addition, essential oils were incorporated into the chitosan films to enhance their protective role.

WHAT HAS BEEN DONE: Addition of 0.1% chitosan in food emulsions was sufficient to reduce number of viable cells of two *Salmonella* strains by ~ 7 logs cfu/ml within 48 hr at $24 \pm 1^\circ\text{C}$, and by ~ 4 logs cfu/ml at $10 \pm 1^\circ\text{C}$. Although *Listeria monocytogenes* was more resistant, 0.65% of chitosan was enough for complete deactivation of the pathogen within 48 hr at $24 \pm 1^\circ\text{C}$.

Incorporation of essential oils in chitosan films resulted in stronger growth inhibition of *Escherichia coli* and *Listeria monocytogenes* compared to pure chitosan films. Inhibition activity toward both bacteria was highest with essential oil of oregano, followed by basil and coriander, and weakest with anise. *L. monocytogenes* appeared to be more susceptible to chitosan-essential oil films than *E. coli*. Thus, inhibition zones of chitosan films with 40 mg of essential oil per cm^2 of film against *E. coli* were 12.5, 12.9, 17.1, and 23.3 mm, and against *L. monocytogenes* 16.0, 16.6, 21.3, and 31.6 mm for anise, basil, coriander, and oregano, respectively.

Results show a great potential for application of this natural compound, alone or in combination with essential oils, in extension of shelf-life of fresh fruits and vegetables and in ensuring safety of fresh and processed foods.

IMPACT: This research area has potentially large impact on Tennessee agriculture. It can directly improve quality and safety of locally grown agricultural products and result in enhanced value and competitiveness of Tennessee products. On the other hand, it can help development of small prawn farms by utilizing shrimp shells as a source of this highly valuable biopolymer. Shrimp waste can be processed to value-added product and increase the profitability of aquacultural farming.

FUNDING: Hatch Act

#

TITLE: Beef Quality Assurance

ISSUE: Consumers are becoming more concerned that the food they eat is safe and wholesome. Consumers are also concerned about the way beef animals are managed on the farm.. Beef producers are concerned about ways to improve the marketability and profitability of feeder calves. The Beef Quality Assurance Certification Program has helped address both issues.

IMPACT: The Tennessee Beef Quality Assurance (BQA) Certification Program that was initiated in February, 2000 continues to grow. Currently 1447 producers have received their BQA certification since the start of the certification program. A total of 419 producers have become certified in 02002. Cattle managed according to BQA guidelines have been marketed at one feeder calf sale for three years, the Wilson Livestock Network Video Sales, the Lower Tennessee Cattlemen's Association Board Sales and Superior Livestock Satellite Sales. The BQA Guidelines have been adopted by the Beef Advantage Program developed by Tennessee Farmers Cooperative plus the health and marketing programs developed by Pfizer and Merial Animal Health Companies. Six Beef Advantage sales have been held in the year 2002 with additional ones already scheduled for 2003. Cattle with BQA Certification and a defined health program marketed at these sales have sold for an average of \$3.00 to \$5.00 per hundred more than comparable cattle sold a weekly auctions the same week.

FUNDING: Smith-Lever

#

TITLE: Fruit and Vegetable Supply-Chain Management, Innovations, and Competitiveness

ISSUE: Wholesalers and retailers find it more costly to purchase the smaller and variable quantities of produce available from small-scale growers. Consequently, most small independent producers find it difficult to operate in the commercial distribution system and often must find local and/or niche markets for their fruits and vegetables. Farmers, extension workers, and government officials struggle with policies and programs to address these challenges. This includes increasing sales, preserving small farms, strengthening economic and social ties between farms and urban residents, and development of emerging outlets for organic and specialty farm products.

WHAT HAS BEEN DONE: Compared to other outlets, little consideration has been given to green grocers. Although neglected, these outlets possess several marketing advantages. Green grocers tend to be spread throughout metropolitan areas, as opposed to direct-market outlets, such as farmers' markets and on-farm locations, so travel costs for customers more closely approximate those of grocery stores. Many customers like the personal attention, quality, and freshness afforded by green grocers, as well as the convenience of not having to search for items they want to buy in large stores. Advantages to growers from selling to green grocers include avoidance of the need to rent spaces at farmers' markets and having their own sales people at the stands. Smaller production volumes are also more compatible with the sales volumes of green grocers.

The structural issues facing many small-scale vegetable producers in states like Tennessee have questions regarding the developmental impact of programs to provide educational and training assistance to these growers and the effectiveness of public monies used to build and support marketing infrastructure. Growers in Tennessee and surrounding states have been surveyed to obtain the relevant insight from their perspective. A sampling of brokers, wholesalers, retail buyers, packers, and shippers have been interviewed. Departments of Agriculture in Tennessee and nine surrounding states have been interviewed to learn about their marketing and other support programs for vegetable producers.

IMPACT: Results from a consumer survey asking for their perceptions and expectations at the green grocer outlet where they were contacted revealed that quality was the most important ideal attribute overall. Employees, pricing, and hours of operation formed a cluster below quality. Information, signs, and appearance comprised a second cluster. Variety was last, which was expected because patrons presumably were at the outlets to buy fresh produce. Among the top four ideal subgroups, no significant differences by store were found. Results suggest respondents are fairly homogeneous with respect to their ideal criteria for rating store features. Few socioeconomic variables had impacts on respondents' ratings, and significant stores had significant impacts on the ratings. The study demonstrates the survey technique can be implemented easily by any green grocer. Results can be used to identify strengths and weaknesses of individual outlets.

Because quality was most important to the average respondent and the typical person reported that the green grocer did not meet ideal expectations regarding products, this gives insight as to what green grocers can work on to improve customer satisfaction. This would be the most important feature to strive to improve. The surveyed outlets were reported to be close to meeting expectations with respect to employee interactions with shoppers, hours of operation, and information provided. The results revealed the fact that customers were not looking for milk, eggs, bakery products, or coffee at these stores. In other words, the results indicated that the stores are meeting customer expectations regarding non-produce offerings, and this matched their indications as to expectations for such products at green grocer outlets.

Comparisons among respondents in Tennessee to that of industry counterparts in the other study-area states is just beginning. The level of financial support by state departments of agriculture for fruit and vegetable marketing varies dramatically. While most of the states contacted have experienced reductions in produce marketing budgets, some advances have occurred in a couple of places. Creation of developmental guidelines are anticipated next year.

FUNDING: Hatch Act, USDA, IFAFS grant

#

TITLE: Gardening and Environmental education.

ISSUE: Home gardeners need more knowledge on producing vegetables for home consumption.

Home vegetable gardening can be an important source of highly nutritious food. A well planned garden, given good care, can supply vegetables from spring until killing frost occurs in the fall. Fresh vegetables harvest from the home garden will be of better quality than that purchased in the supermarket. Safe use of pesticides in vegetable gardens is a critical issue and an environmental concern for many gardeners.

WHAT HAS BEEN DONE: Specialist has conducted home garden meeting, site visits, participated in training master gardeners, and conducted home vegetable gardens demonstrations to teach gardeners the important of following extension recommendations on vegetable production. Specialist conducted home garden meeting site visited, in-service training to reach more than 300 home gardeners

IMPACT: Reports have revealed that production and quality of vegetable increased as a result from better insect and disease control, and other research based, production practices taught by the cooperative extension personnel.

FUNDING: TSU Extension

GOAL 3: A healthy, well-nourished population.

Overview

Major program/research areas included under Goal 3 of the Tennessee Agricultural Research and Extension System Plan of Work included: nutrition and diet issues, healthy food products and healthy lifestyles and health care issues. The following describes the projects and programs conducted by the UT Agricultural Experiment Station, the UT Agricultural Extension Service and the TSU Cooperative Extension Program in addressing these areas. More specific information related what was done and what impacts were achieved in each area is included under the Key Theme section.

Nutrition and Diet Issues:

Tennessee families receiving Food Stamps report a lack of knowledge in the areas of cooking, food purchasing, managing food dollars and identifying alternatives to purchasing fast foods and pre-prepared foods. In 2002, most all counties utilized local Tennessee Nutrition Consumer Education Program (TNCEP) coalitions to design and deliver nutrition education to address these critical concerns.

The goal of TNCEP is that Food Stamp individuals and families will gain knowledge and skills needed to reduce the risk of inadequate nutrition while becoming empowered to move toward self-sufficiency. This goal will be accomplished by helping families effectively use Food Stamps and related resources.

The Expanded Food and Nutrition Education Program (EFNEP) is the second largest nutrition education program in Tennessee directed at low income families. It reaches a large number the targeted population with educational programs related to food nutrition and health.

Healthy Lifestyles and Health Care Issues:

Experimentation efforts in nutrition and health are related to the impact of the intake of calcium an calcium-rich dairy products on obesity, mechanisms of agouti-induced obesity, the effects of supplementary choline, carnitine and caffeine on body fat and blood lipid profiles, and arachidonic acid and downstream signaling in intestinal cancer. This funded research is designed to have major impact on the health of Tennesseans and citizens throughout the country.

Other programs and projects described in this section of the report include diabetes education, anti-smoking education for youth, exercise education and cardiovascular education.

Allocations for Goal 3 Projects and Activities:

UT 1862 Research:

Hatch - \$157,297
State Outlays - \$357,574

UT 1862 Extension:
Smith-Lever b and c - \$2,514,577
Smith-Lever d (EFNEP) - \$1,907,370
State and County Allocations - \$9,469,289

TSU 1890 Extension:
Smith-Lever b and c - \$336,662
State and Local Allocations - \$16,000
Special Grant - \$307,553

FTE's for Goal 3:

UT 1862 Research - 2.4

UT 1862 Extension - 111.9 (does not include 81.76 EFNEP-funded paraprofessional FTE's)

TSU 1890 Extension - <unavailable at time of printing>

KEY THEME - HUMAN NUTRITION

TITLE: Nutrition Programming (TNCEP) for Food Stamp Families in Sequatchie County

ISSUE: Statistics indicate 17.8% of the county population receive food stamp assistance and 54% of school students received free or reduced meals. Families need nutrition and consumer education in order to feed family members adequately and for good health. The Tennessee Nutrition and Consumer Education Grant Program has helped to achieve this and the county advisory committee recommended that the priority area be continued.

WHAT HAS BEEN DONE: Educational focus areas in nutrition were related to the dietary guidelines and specifically to the food guide pyramid. Programming in 4-H clubs emphasized awareness and/or increased knowledge levels. Single session programming was held with all students (550) in grades 4 through 8 and dealt with the importance of water in the diet. Teacher partners in preschool, kindergarten, and first grades taught a series of lessons on the importance of choosing a balanced diet from the food guide pyramid. Teachers of two kindergarten classes taught multi-sessions on the importance of clean hands and food safety. Sessions were taught at the senior center on the importance of a healthy diet for those over age 55. Exhibits were displayed at senior health fair and the senior nutrition center. Finally, two multi-session programs were conducted with families first and Adult Basic Education classes on food economics.

IMPACT: Follow up evaluation and survey data revealed that:

** teachers reported 68 of the 80 first grade students said they tried a new vegetable they had not eaten before)

** 7 (of 7 participants) families first students said they would use the methods recommended in class to plan their meals for their families

*** 414 students in grades four through six said they tried to eat more foods as recommended in their food guide pyramid since the lesson last month

** As a result of TNCEP program on food safety, 2 kindergarten classrooms (26 students) were washing their hands more often and more carefully (Teacher evaluation forms).

** 10 senior citizens learned the importance of limiting fat in the diet and its relationship to cardiovascular disease (survey information relayed by center supervisor)

FUNDING: Tennessee Nutrition and Consumer Education Grant and general Extension Funds

#

TITLE: Improving Lives of Food Stamp Families- TNCEP

ISSUE: Wayne County has 1300 families receiving food stamps according to the Department of Human Services in January 2000. U.S. Census Bureau reports that 20% of Wayne County population are living in poverty. According to Wayne County Department of Education, fifty percent of school age children eat on free and reduced lunches. Surveys conducted by Wayne County Health Council found nutrition education and Diabetes education as priority program needs for Wayne county. Lack of funds and lack of nutrition knowledge are the reasons this audience is not following good dietary and nutrition practices. The TNCEP coalition targeted nutrition, food buying, and food preparation skills as major program needs.

WHAT HAS BEEN DONE:

1. Agent & TNCEP PA taught food safety for seniors to Seniors Citizen.
2. Agent & TNCEP PA conducted a 5-series lesson on Fast Lane Cooking at commodity site for 200 recipients.
3. Agent & TNCEP PA conducted a 4-series Managing Food Resources with 25 Head Start Parents.
4. Agent & TNCEP PA taught Health Works to 20 4th-6th grade classes at schools where 50% eat free or reduced lunch.
5. Agent & TNCEP PA conducted 4-series lessons on Eating Right Eating Healthy for 15 Child-care providers.

IMPACT:

- 50% (100-200) commodity recipients gained knowledge of healthy food choices
- 25% used low-fat cooking methods
- 25% read labels and purchased low-fat foods
- 100% (35) senior citizens gained knowledge of how to cook foods to safe temperatures
- 100% (35) gained knowledge of storing food properly
- 10 checked refrigerator temperatures and used labels to identify how long food was in refrigerator
- 25 Head Start parents gained knowledge of money management and managing food resources
- 25 gained skills in cooking food from scratch
- 80% of kindergarteners, 4th grade & 5th grade youth gained knowledge of food groups & number of servings
- 15 child-care providers teach recommended food group & serving to children
- 3 child-care centers set up nutrition centers

FUNDING: TNCEP Grant

#

TITLE: Improving the health and lives of Food Stamp Families through diet, lifestyle changes and smart shopping skills

ISSUE: Twenty-three percent of the residents in Jackson County receive food stamps and sixty-six percent of the students in the county's schools receive free and reduced school lunches. Many low income families have limited educations and therefore lack the skills necessary to make healthy food choices for themselves and their families.

WHAT HAS BEEN DONE: Through TNCEP programs on nutrition and hand-washing have been presented to pre-school, kindergarten, third-grade students, and 4-H members in grades four through eight.

An active TNCEP Coalition has been developed consisting of ten members meet monthly to address nutrition and health concerns of the county's food-stamp recipients.

Agent has built the TNCEP Teaching Materials Inventory by using the funds generated through In-kind Match monies.

The TNCEP Teaching Materials Directory has been expanded to approximately three hundred items.

During teachers meetings TNCEP was introduced, portable kitchen totes filled with nutrition

teaching materials and equipment were presented to the teachers, and instructions were given in filling out TNCEP activity and in-kind forms.

IMPACTS:

Families First Program is following a program on smart shopping tips and a grocery store tour with nine participants:

(67%) 6 stated that they plan to buy 100% juice drinks instead of so many sodas for themselves and their families.

(67%) 6 stated that they will buy fewer prepackaged foods because of the high sodium content.

(89%) 8 plan to buy store brand versus name brand food items.

Pre-school through eighth grade students Following nutrition programming on The Food Guide Pyramid the activity/evaluation forms reveal from 863 contacts:

89% (768) plan to choose a diet based on the food guide pyramid.

77% (665) plan to eat more fruit, vegetables, whole grains, and/or dairy foods.

77% (665) plan to eat fewer high fat, high sodium, and or high sugar foods.

100% (863) plan to increase physical activity.

95% (820) plan to maintain a healthy weight.

Commodity Recipe Booklets were distributed to 300 recipients quarterly. Interview results from randomly selected clientele indicated:

50% (150) tried at least one of the recipes utilizing commodity foods.

90% (270) found more uses for the non-fat dry milk.

80% (240) stated that they would use the diabetic recipe booklet because they had diabetes or they would give it to someone who had diabetes.

Eight out of ten TNCEP Coalition members have participated in teaching nutrition classes to TNCEP clientele.

Fifteen thousand dollars in In-Kind matching funds were used to purchase small kitchen appliances, office equipment, and a camera for documentation. Nutrition teaching materials included games, videos, displays, curriculum, and food models, etc., were purchased. Items were purchased to furnish the totes for the two elementary schools and one middle school in the county for the teachers to use to teach nutrition classes.

A TNCEP Teaching Materials Directory with over three hundred items has been given to ten Coalition members, FCS Advisory Committee members, seventy teachers, and other program partners from the Health Department.

Promoted TNCEP through teacher's meetings at three schools to introduce TNCEP, and to

present three portable kitchen totes full of nutrition teaching materials and small appliances to 70 teachers.

The Food Fiesta program will be presented in January to all third grade students in the county.

FUNDING: TNCEP Grant

#

TITLE: Diabetes Education

ISSUE: Diabetes is the sixth leading cause of death by disease in Tennessee, contributing to the death of over 3,500 Tennesseans every year. The Lewis County TNCEP Coalition identified diabetes education as a priority issue for limited resource clientele. Education plays a critical role in helping people understand diabetes. The American Diabetes Association recommends that people with diabetes develop a healthy eating plan. Many of those with diabetes have poor eating habits and may also lack the skills to prepare foods that fit into a meal plan for people with diabetes. Extension staff, registered dietitians, Lewis County Health Council members and Lewis Ambulatory Care Center staff developed a plan for diabetes programs through the "Health in the High Forest" series that was conducted during 2002.

WHAT HAS BEEN DONE: A series of six classes was conducted over an eight month period, which focused on managing diabetes through diet and exercise, targeting people with diabetes and their families and others at risk for developing diabetes. A core group of approximately 40 people attended these sessions. Two diabetes cooking schools held in Lewis and Wayne counties helped 100 participants learn to manage their blood glucose levels by planning and preparing good tasting meals with less fat, salt and sugar and including more fruits, vegetables and whole grain foods. Bi-monthly newsletters for diabetics were sent to 150 diabetics in Lewis and Wayne counties. These newsletters provided information on nutrition, food safety, exercise and physical activity and new treatments for diabetes. They also contained recipes to help plan for diabetic meals.

IMPACT: Following their participation in the "Health in the High Forest" series, 75%(30) committed to adopt at least one of the recommended behaviors to control their diabetes. Of this number, 66%(20) were contacted after three months in a follow-up phone call or visit to determine the level of practice adoption. Of this number 50%(15) were still following at least one of the behaviors they had committed to adopt. 68%(20) reported that they had increased their fruit and vegetable consumption from 2 servings a day to 5 servings a day. Exercise and fitness calendars were completed by 50%(20) of the participants. 90%(18) reported an increase in physical activity from 10 minutes a day to 30 minutes a day. Six month follow-up visits and phone calls found that 50%(20) were still following recommended health practices including controlling blood sugar and increasing exercise. A questionnaire at the end of each cooking school showed that 80%(80) participants tried at least one of the diabetic recipes prepared and 75%(75) planned to use the diabetic recipes at home to prepare meals. 50%(50) planned to

increase their use of artificial sweetener to prepare desserts and 50%(50) planned to increase their fruit intake from 2 servings a day to 5 servings a day. The local physician reported having seen an improvement in the blood glucose levels of patients who had attended the diabetes cooking schools and other extension sponsored diabetes workshops.

FUNDING: Extension funds and Tennessee and Consumer Education Program.

#

TITLE: Improving Lives of Food Stamp Families- TNCEP

ISSUE: In 2002, 1364 individuals in Lewis County received food stamps. These individuals spend more on food (32% of total expenses as compared to 16% for nonpoor) and are at greater risk for health problems related to poor diet. These two factors make it imperative that they gain the skills and knowledge necessary to provide healthy meals for their families. TNCEP coalition members identified the need for limited resource clientele to make healthier food choices and choose a diet that follows recommended dietary guidelines.

WHAT HAS BEEN DONE: In partnership with program partners at Tennessee Technology Center Adult Basic Education classes, a six week series, "Fast Lane Cooking," was conducted with twenty students including Families First participants. The series focused on the basics of good nutrition, food safety and food purchasing and management. The series focused on eating more fruits and vegetables and eating more foods made from whole grains to reduce factors for heart disease, diabetes and high blood pressure. Another series, "Pyramid Plus," was conducted at the Tennessee Technology Center and the Career Center. Fourteen one-hour sessions were conducted over a three month period. This series focused on selecting foods using the food guide pyramid, incorporating more fruits and vegetables in meals, and making low-fat food choices. Thirty five participants completed this series.

IMPACT: According to the TNCEP program activity report, 80%(16) indicated they planned to adopt one or more of the recommended dietary practices relating to eating more fruits and vegetables, more whole grain foods and eating fewer high-fat foods. A three month follow-up survey using phone calls, personal observations and personal visits found that 50%(10) were still following at least one of the recommended practices. One participant said, "I now shop with a grocery list and read the labels to select low-fat foods, and I am saving \$15 per week at the grocery store." Reports from five other participants found them saving about \$40 per month or a savings of \$2880 per year from 33% of the participants. In the Pyramid Plus series, all 35 participants could name a low cost food they could purchase. A three month follow-up survey of 18 of the 35 participants found that 49%(8) had adopted recommended practices relating to increasing fruits, vegetables and whole grains in their diet.

FUNDING: Extension funds and Tennessee Nutrition and Consumer Education Program.

#

TITLE: Achieving Healthy Diets - EFNEP

ISSUE: Low-income families are at risk for hunger, malnutrition and chronic disease as a result of limited resources to obtain nutritious food and poor resource management practices. Children who are hungry are more likely to suffer severe physical and mental health outcomes, such as poor growth and learning disabilities, than well-nourished children. Hunger, malnutrition and chronic disease cost taxpayers due to increased education and health-care expenses and use of emergency food providers, such as food pantries and soup kitchens.

WHAT HAS BEEN DONE: The Extension program, Expanded Food and Nutrition Education Program (EFNEP), provided nutrition education to 6,592 low-income families and 21,582 youth in 25 Tennessee counties in 2001-2002. Participants were reached through typical locations frequently visited by impoverished families such as health departments, food stamp offices, public housing and public schools. EFNEP also reached non-traditional families in homes for abused women and youth, drug treatment centers, juvenile detention centers and prisons.

IMPACT: As a result of participation in EFNEP, 90% of families improved their diets and saved \$832,644 on their food bills. By learning to spend their food resources wisely, participants more often made their food last to the end of the month without seeking emergency sources. Several skills were learned as a result of completing an average of 12 lessons. Because of EFNEP:

- ò 63 percent more often used the "Nutrition Facts" on food labels to make food choices.
- ò 54 percent more often planned meals in advance.
- ò 52 percent more often used a list when shopping.
- ò 50 percent more often thought of healthy food when choosing what to feed their family.
- ò 48 percent more often prepared foods without adding salt.
- ò 46 percent more often compared prices when they shopped.
- ò 45 percent less often ran out of food before the end of the month.

After participating in EFNEP, 96 percent of youth reported eating a variety of foods; 98 percent increased knowledge of the essentials of human nutrition; 96 percent increased their ability to select low-cost, nutritious foods; and 98% improved practices in food preparation and safety.

FUNDING: USDA Smith Lever 3(d) funds, Tennessee Department of Human Services Community Grant Funds (Cooking School)

#

TITLE: Male Inmate Nutrition Education

ISSUE: Many men do consider the importance of eating nutritiously. As a result, many men do not plan

meals nor do they observe the importance of consuming the recommended daily servings of food from the various food groups.

WHAT HAS BEEN DONE: Male inmates have been trained about the value of nutrition and are emphasizing the importance of good eating practices and wise shopping practices with family members.

IMPACT: Participants were given pre-tests of knowledge of nutrition/consumer practices awareness and on parenting. They were given post-tests following their training period. The participants demonstrated that they acquired knowledge with regards to seeing a need to change patterns of behavior regarding their food purchase, preparation, and eating habits. They indicated in their evaluation of the training as having realized the importance of effective communication with children and the importance of building parent-child relations.

Funding Source: TSU Cooperative Extension

#

TITLE: Mechanisms of Agouti-Induced Obesity

ISSUE: To determine the mechanisms of agouti's function in fat cells and its role in obesity.

WHAT HAS BEEN DONE: Using both mouse transgenic models and cultured human and murine fat cells, researchers have attempted to determine the mechanisms of agouti's function in fat cells. Our progress towards accomplishing each of the proposed aims are as follows: 1. Effect of agouti on adipocyte gene expression . . . We examined the effects of recombinant agouti protein on expression of key lipogenic genes and identified the regulatory sequences in the adipocyte fatty acid synthase gene that agouti protein in adipocytes induces expression of adipocyte markers, namely leptin and the fatty acid synthase. This aim has been completed and findings published. 2. Adipocyte receptors involved in agouti action . . . We used pharmacological agents to block melanocortin receptors, known to mediate agouti's effects in regulation of coat color. In fat cells, melanocortin receptors previously shown to mediate agouti related protein's central effects on food intake do not mediate agouti's metabolic effects in adipocytes. These findings were also published with data from aim 1. 3. Effect of agouti on insulin signaling . . . Our studies indicate that agouti potentiated insulin stimulation of lipogenesis. In collaboration with Dr. Toyu Huang and Dr. John Joontz, it was found that agouti does not effect the insulin signaling proteins tested including phosphorylation of the insulin receptor, insulin receptor substrate and the PI3 kinase. 4. Identification of novel genes regulated by agouti. This aim has not been initiated yet.

IMPACT: Human fat cells but not rodent fat cells produce the agouti protein and thus understanding the role and function of this protein in fat cells may help develop new treatments for obesity

FUNDING: Hatch

#

TITLE: Dietary Calcium Modulation of Obesity

ISSUE: obesity has reached epidemic proportions in the U.S. and worldwide. Obesity related co-morbidities result in 300,000 obesity-attributed deaths in the U.S. annually with an economic impact of over \$117 billion per year.

WHAT HAS BEEN DONE: Dietary calcium plays a pivotal role in the regulation of energy metabolism, as we have found high calcium diets to attenuate adipocyte lipid accretion and weight gain during periods of overconsumption of an energy-dense diet and to increase lipolysis and preserve thermogenesis during caloric restriction, thereby markedly accelerating weight loss. We have shown a key role for intracellular Ca²⁺ in regulating adipocyte lipid metabolism, with increased intracellular Ca²⁺ resulting in stimulation of lipogenic gene expression and lipogenesis and suppression of lipolysis, resulting in lipid filling and increased adiposity.

IMPACT: This research increases our understanding of the role of dietary calcium in regulating energy metabolism and thus positively impacting obesity. Research findings have been published in six different journals.

FUNDING: Hatch

#

TITLE: Effects of Supplementary Choline, Carnitine and Caffeine on Body Fat and Blood Lipid Profiles.

ISSUE: The judicious combination of nutrients as dietary supplements, selected on the basis of their biochemical function, hold promise for healthy weight and body composition. Most all these nutrients are present in our daily diet of milk, meat, beans and cereals.

WHAT HAS BEEN DONE: This research has shown that choline, carnitine and/or caffeine enhanced fat metabolism in animal models i.e. rats and guinea pigs. Now we report the results of study completed on humans.

IMPACT: Nineteen women divided in three groups were given placebo or choline or carnitine for 1 week, and placebo or choline plus carnitine for an additional week. While there was no change in the placebo group, serum and urinary carnitine were decreased in the choline supplemental group.

FUNDING: Hatch

#

TITLE: Nutrition Education for Low-Income Families

ISSUE: Low-income families are at risk for hunger, malnutrition and chronic disease as a result

of limited resources to obtain nutritious food and poor resource management practices. Children who are hungry are more likely to suffer severe physical and mental health outcomes, such as poor growth and learning disabilities, than well-nourished children. Hunger, malnutrition and chronic disease cost taxpayers due to increased education and health-care expenses and use of emergency food providers, such as food pantries and soup kitchens.

WHAT HAS BEEN DONE: The Extension program, Expanded Food and Nutrition Education Program (EFNEP), provided nutrition education to 6,592 low-income families and 21,582 youth in 25 Tennessee counties in 2001-2002. Participants were reached through typical locations frequently visited by impoverished families such as health departments, food stamp offices, public housing and public schools. EFNEP also reached non-traditional families in homes for abused women and youth, drug treatment centers, juvenile detention centers and prisons.

IMPACT: As a result of participation in EFNEP, 90% of families improved their diets and saved \$832,644 on their food bills. By learning to spend their food resources wisely, participants more often made their food last to the end of the month without seeking emergency sources, such as food pantries. Several skills were learned as a result of completing an average of 12 lessons.

Because of EFNEP:

- ò 63 percent more often used the Nutrition Facts on food labels to make food choices.
- ò 54 percent more often planned meals in advance.
- ò 52 percent more often used a list when shopping.
- ò 50 percent more often thought of healthy food when choosing what to feed their family.
- ò 48 percent more often prepared foods without adding salt.
- ò 46 percent more often compared prices when they shopped.
- ò 45 percent less often ran out of food before the end of the month.

After participating in EFNEP, 96 percent of youth reported eating a variety of foods; 98 percent increased knowledge of the essentials of human nutrition; 96 percent increased their ability to select low-cost, nutritious foods; and 98% improved practices in food preparation and safety.

FUNDING: USDA Smith Lever 3(d) funds, Tennessee Department of Human Services Community Grant Funds (Cooking School)

#

TITLE: Nutrition Education

ISSUE: As in most counties, teaching youth to eat healthy and to stay healthy is an important issue. Because 35% of school aged children in Crockett County receive free or reduced price lunches, our youth need to be educated on the importance of good nutrition and the Food Guide Pyramid.

WHAT HAS BEEN DONE: More than 200 youth in the 6th grade in Crockett County

participate in a monthly program entitled "Sensational Science." This agent designed curriculum focuses on several science activities, most of which involve "kitchen" science. Students participate in hands-on activities that bubble, fizz and change colors using basic kitchen food items. An educational program was conducted for 4th and 5th grade 4-H members entitled "A Taste of the Orient". This program introduced 4-H youth to an Asian culture. Participants learned more about China and Japan through a group discussion. They were then able to taste oriental foods, such as stir fry, egg rolls and green tea. Students also participated in sumo wrestling. They finished their food fiesta with a game of Nutrition Jeopardy, which helped to reinforce proper nutrition and the Food Guide Pyramid. For the past several years, 4-H members have participated in the June Dairy Month contest. This is usually stressed during the Summer Reading Program, which involves more than 100 youth per week. Four-H members are responsible for setting up June Dairy Month exhibits at the library, conducting calcium and nutrition programs at the library and serving dairy products to many of the youth during the Summer Reading Program. Food drives to help support our local food bank have also been conducted to reinforce healthy eating habits to Crockett Countians.

IMPACT: The Sensational Science programs have allowed 6th grade youth the see how simple kitchen items can be used to conduct simple, interesting science projects. Student and teacher evaluations have shown that an increase in science knowledge has been gained through the 4-H programs, and many youth have stated that they tried the experiments at home on their families. Through the food fiesta programs, more than 150 youth have learned the parts of the Food Guide Pyramid, as well as many proper nutritional habits. This was measured through the number of correct answers given in Nutrition Jeopardy. Students were also able to experience a new culture and new food items. The successes of the June Dairy Month Chairperson were evident through the selection of the June Dairy Month Chairperson for the Western District in the Division 1 category. A Crockett County 4-H member was rewarded for her efforts by receiving the June Dairy Month Chairperson for the District. More than 100 youth on a weekly basis participated in her June Dairy Month activities, from making Milk Mustaches to trying new varieties of cheese. Local businesses also participated in June Dairy Month by posting the announcement on their business marquee. As a result of local 4-H food drives, more than 200 cans of food have been donated to the local food closet.

FUNDING: Extension funds

#

TITLE: Memphis Urban Garden Program

ISSUE: Memphis and Shelby County 2002 Vital Statistic report that heart disease is the number 1 leading cause of deaths, cerebrovascular disease (stroke) is number 3, diabetes mellitus is number 4, hypertension and renal disease is number 13. Tennessee Kids counts reports there were 3,299 high school drop-out in grade 9-12 and 15,460 children referred to Juvenile Courts.

WHAT HAS BEEN DONE: Three programs were implemented to address the above issues (1)

The Memphis Urban Garden Program a partnership between City of Memphis, Housing and Community Development and Tennessee State University, Shelby County Extension Service that encourage participants to plant and eat fresh fruits and vegetables. Agent secured \$41,000 from the City to implement this program. Twenty Six volunteer leaders who also serves as the advisory committee were trained to assist with the enrollment and implementation of the program. School gardens are also a part of the MUGP. (2)The Memphis Urban Garden Nutrition Program are educational workshops where agent partner with nutrition co-worker and present gardeners with the latest research information on food safety and nutrition education. (3) The Memphis Urban Garden Training Program a partnership together with Shelby County Correction Center, Shelby County Extension Service and The Green Industry to address alternatives programs for inmates and not return to prison.

IMPACT:

(1). Agent, through TV appearance and 26 Volunteer Leaders, enrolled 1,212 (1,002B&210W) participants that planted backyard, community and school gardens. Over \$500,000 in food costs was saved by participants. Knowledge was gained in 6 advisory committee meetings and educational workshops that were conducted by Agent, EFNEP Program Assistants, and TSU Specialist in leadership, production practices and nutrition. Meetings and workshops were held at Mt Pisgah Church, Hollywood and Gauisman Community Centers, North Memphis Branch Library and the Shrine School. Knowledge and skills were also gained as 43 gardeners competed in the county contest, 14 competed in the canning exhibition, 165 attended the Annual Awards Program and 31 attended the educational field trip to Tennessee State University and Nashville's Farmers Market.

(2). Agent partnered with the University of Georgia Extension Urban Garden Program. Agents and Program Assistants conducted the first dual-state Nutrition Education Workshop for gardeners and small farmers. Thirty-seven (29B&8W) participants gained skills by participating in hands-on demonstrations including bottling pepper sauce, making sponges from loofahs and stringing peppers for the purpose of drying. Knowledge was also gained as five EFNEP Program Assistants presented cooking demonstrations in food safety and proper preparation of pork, poultry, fruits and vegetables. Educational displays were also exhibited by TNCEP, FCS and the Master Gardener Program.

(3). Agent partnered with Shelby County Correction educators and officers (3B&3W) to address reasons inmates return to prison. Establishing employment was the number one reason they returned. Agent partnered with co-workers, UT and TSU Specialists and implemented the first Urban Garden Training Program and enrolled 20 inmates (16B&4W) and 3 Officers (2W&1B). This program is designed to train limited resource adults, at-risk youth, and the incarcerated in the area of horticulture at the site designated by participants. Eleven inmates and two Officers received certificates after completion of eight weeks of training in 7 horticultural subject matter units and 1 in Starting Your Own Business. Personal testimonies were recorded as participants were interviewed and recorded in local newspaper saying, "I want to take every opportunity I can to learn while I'm here" and "I want to make the most of my time here so when I get out I

can give something back to the community".

FUNDING: Tennessee State University and City of Memphis Housing & Community Development

#

TITLE: Special Summer Education Program

ISSUE: During the summer months children in low income areas do not receive proper nutrition or food for themselves daily. Over 65% of the children in District F which is the Bruce, Future City, and Southtown areas of Dyersburg qualify for free or reduced meals during the school year. This data comes from the Dyersburg /Dyer County Board of Education. Newbern Monroe area and Tigrett/Mt. Pleasant areas are over 80%. This is 2001 data according to Board of Education State of Tennessee. After visiting with Community Centers Directors, and making personal observation, there are no structured recreation programs in the above areas. Lack of Community pride is noticed from behavioral of youth in those areas.

WHAT HAS BEEN DONE: From one week after the school year ends until two weeks before school starts, a Special Summer Education Program was implemented. Approximately 800 children daily received nutritious meals. Recreation was provided for children during the program. 32 jobs were created to help with supervision, recreation programs as well as preparation of food. The program started June 10 and ended July 28. William O Taylor and CRD Staff trained the summer education staff to carry out responsibilities with children. Dyersburg Housing Authority, Newbern Housing Authority, Dyersburg State Community College Upward Bound Program, Job Training Partnership Act, Dyersburg Parks and Recreation, Mt. Pleasant Baptist Church, Dyersburg Police Department all networked with SSEP personnel to ensure success. Over 18,788 lunch meals were served and 8,247 breakfasts were served. Horticulture and leadership projects were to many of the program participants. Projects identifying trees developing citizenship skills were taught. University of Tennessee and Tennessee State University Specialist and Agents develop a curriculum and implemented it to meet the needs of all children as regards to leadership and nutrition.

IMPACT: According to Dyersburg Police Department 2002 statistics, youth crime is down 55%. Parents Survey and observation of SSEP personnel shows more children are aware of and receiving nutritious meals. Summer jobs are created to help the local economy and allow people to provide a positive service to children. More agencies are willing to give their time and money to help with program expenses. Youth are becoming more aware of why leadership roles are important. Community youths are participating with beautification projects and more aware of community pride. A wholesome place was provided for youth during the summer months.

FUNDING: Through regular extension, grant through parks and recreation department of county government, USDA, Department of Human Services.

#

TITLE: Nutrition, Health and Food Safety

ISSUE: According to the 2000 Kids Count data for Tennessee, Weakley County has a population of 33,556 people. Weakley County reported 2,424 people receiving food stamp assistance. Even though at only 7.2% of the population, studies have shown that it is the children who are most affected by food insecurity. And, studies also show a link between hunger and poor performance in schools. The Weakley County Child Nutrition program reported that 1541 children are eligible for the free and 463 children are eligible for the reduced lunch program. Because of the link shown between hunger and poor school performance, the Weakley County TNCEP Coalition targeted the culturally diverse youth of the Martin Housing Authority to be an audience who would most benefit from nutrition related programs that the youth could in turn share with their parents or guardians, thereby reaching a targeted audience of limited income youth and their families who may be at risk of food insecurity.

According to the Weakley County Advisory Committee, all audiences benefit from nutrition and other health related education programs, especially single parents and youth at risk. Nutrition and health concerns are of increasing importance to an aging Weakley County population as well. According to the 1990 Census information there are 5,139 people in Weakley County who are 65+. This group makes up about 17% of the Weakley County population. And, of this group, 22% are eligible for food stamp assistance. The FCE program planning committee stated that nutrition and health related topics for the 2002 program year would target the needs of the FCE membership who are mainly 65+.

WHAT HAS BEEN DONE:

*10 nutrition and health related programs were developed and implemented by the agent in cooperation with the 4-H FCS and Ag agents to motivate the youth of the Martin Housing Authority After School Program (a limited asset and multiracial audience) to adopt eating and lifestyle behaviors that are consistent with the Dietary Guidelines for Americans and the Food Guide Pyramid. These nutrition programs were supplemented through the TNCEP grant funds in collaboration with the Martin Housing Authority and TNCEP coalition. Program progress and evaluations were shared from the Extension office with the Western District Office, county commissioners, state legislators and agriculture committee through a bimonthly report.

* “Do You Know Beans?” a program developed and implemented by the agent to celebrate the nutritional and economical benefits of beans. This program was presented at the Martin Housing Authority to 9 senior adults involved with the Senior Nutrition Program, 25 parents of the Title 1 program of Sharon and Dresden Elementary Schools, and 80 FCE members. Program progress and evaluations were shared from the Extension office with the Western District Office, county commissioners, state legislators and agriculture committee through a bimonthly report.

*5 nutrition and/or health related programs were developed by agent and/or state specialist for

the FCE audience to address health care needs of especially women age 65+. End of program surveys revealed these results:

•Diet and Successful Aging? - 43% said they would read labels for nutritional content;

•What is Asthma? - 66% said they would reduce the asthma triggers in their homes;

•What You Need to Know About Breast Cancer - 44% said they would do monthly breast self-exams;

•Mammograms and Clinical Breast Exams - 44% said they would get regular mammograms;

•Take Charge of Diabetes - 50% indicated that they would reduce weight and increase activity to reduce the risk factor of developing Type II Diabetes. Program progress and evaluations were shared from the Extension office with the Western District Office, county commissioners, state legislators and agriculture committee through a bimonthly report.

*The "Poverty Simulation" is a TNCEP program designed to educate professionals through a role-play workshop to address what it's like to live a-day-in-the-life of a limited income person/family. 70 area professionals from Weakley and Obion counties, who work with limited income families took part in this workshop at the UTM Ballroom. The program was funded through the TNCEP grant and conducted jointly by the Adult FCS agents from Weakley and Obion County, members of the TNCEP coalition and DHS. Program progress was shared from the Extension office with the Western District Office, county commissioners, state legislators and agriculture committee through a bimonthly report.

*A "Fun with Food" program was developed by the agent for the parents of the preschool state grant program for limited income children at Dresden Elementary School. The teacher for the preschool program indicated that she would like to be involved in the TNCEP coalition and use the nutrition related games, puzzles and books in her classroom. Program progress was shared from the Extension office with the Western District Office, county commissioners, state legislators and agriculture committee through a bimonthly report.

*29-three minute radio spots were developed and aired by the local radio station, reaching the Weakley County audience and surrounding counties including Kentucky, dealing with nutrition, food safety and health issues. 385 homes received 4 general FCS Newsletters with food and nutrition information.

IMPACT:

*67% of the 30 children attending each of the following Martin Housing Authority After School programs were able to demonstrate knowledge gained through verbal and visual observation of the agent:

October 2001 "An Apple A Day" - the nutritional benefits of apples and other fruits in the diet;

November 2001 "Thanksgiving Blessing Mix" - the nutritional benefits of snacks in the diet;

December 2001 "Merry Christmas My Deer" - the nutritional benefits of snacks in the diet;

January/February 2002 "Ground-hog Day" - what foods would the ground-hog eat from the food

guide pyramid; March 2002 “Plant a Tree for Fruits and Nuts” - the benefit of nutritious foods from fruit and nut trees; April 2002 “Reduce, Reuse, Recycle” - the nutritional and economic benefit of leftovers; May 2002 “Red, White and Blue” - the aesthetic appeal of a variety of food colors and the nutritional benefit of deep colors in fruits and vegetables; June 2002 “Got Milk?” - the nutritional benefit of dairy products in the diet; October 2003 “Happy Halloween” - the nutritional benefit of fruits and vegetables as opposed to candy as a “sometime” snack; and November 2003 “Mealtime Manners” the nutritional benefit of a pleasant mealtime atmosphere.

* Indication of possible behavior changes due to the "Do You Know Beans?" program effort was through a pre and post test. The results indicated that 35% would add beans and/or peas to their diet at least three times a week.

*As a result of the Poverty Simulation program many participants commented that their awareness level had increased because prior to the simulation, they had no idea of the complex issues that many limited income families face on a daily basis.

* The 16 parents present for the "Fun With Food" program, indicated that they would try at least one of the fun snack ideas to encourage their children to eat more fruits and vegetables.

FUNDING: Extension Funds and TNCEP

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TITLE: Nutrition Education in Scott County (Food Safety and Handwashing)

ISSUE: Scott County's population is 18358 with 6630 individuals (2120 households) receiving food stamps. Thirty-six percent of the population are food stamp recipients. Approximately 80% of the students receive free and/or reduced lunches. Through visiting with the Scott County Extension Agricultural Committee, TNCEP Coalition members, RAD committee members, 4-H/FCS Advisory Council, and other key leaders of the community, there is a need for basic nutrition education that includes the basics of food preparation, shopping skills, managing food dollars, meal/snack planning, food safety and proper handwashing. The stakeholders have expressed the urgent need for nutritional education that will aid individuals and families in achieving healthier diets and lifestyles. Basic nutrition skill building will offer the education that is desperately needed to help food stamp recipients, low income individuals and families, and youth make better decisions concerning their diets, which in turn, will improve their quality of life.

WHAT HAS BEEN DONE: Handwashing classes were taught to pre-K through third grades. Those participating in the handwashing classes increased their knowledge, skills and aspirations related to food safety and proper handwashing. Based on post-test evaluations of third graders,

ò 97% reported they planned to start washing their hands before eating.

- ò 98% reported they planned to stopped biting their nails.
- ò 96% indicated they would teach someone at home how to wash properly.

Follow-up evaluations of a sample of third graders showed that:

- ò 92% had stopped biting their nails.
- ò 96% were washing their hands before they ate.
- ò 69% were washing their hands at other times than just before eating or after using the restroom.
- ò 92% were using soap and water.
- ò 73% had taught someone at home how to properly wash their hands.

Eighty-eight percent (42 out of 48) of K through 3rd grade teachers were partners during the program year. One success of the year was that more teachers checked out materials and taught lessons on their own instead of asking the agent or program assistant to do the teaching. This may have been due, in part, to incentives offered at the beginning of the year for teaching nutrition lessons on their own. The program has grown tremendously since 1999 and has become recognized as a very successful Extension program in the county.

FUNDING: A grant through the Department of Human Services.

#

TITLE: TNCEP - Tennessee Nutrition and Consumer Education Program

ISSUE: According to the USDA, Food and Nutrition Service web site (April, 2002), Tennessee ranks 9th in the nation in the number of monthly participants in the Food Stamp Program. According to the Department of Human Services, there are 1,624 Food Stamp households in Dickson County (December, 2002). These individuals and families need education to implement healthy eating practices, handle food safely, and maximize food dollars. A number of local organizations and agencies serve this audience. A TNCEP Coalition was not in place to coordinate services and address the needs of local clientele.

WHAT HAS BEEN DONE: Agent invited individuals representing over 15 agencies and organizations who work with Food Stamp eligible families and/or in the area of food and nutrition education to form the Dickson County TNCEP Coalition. Extension faculty from the state and district levels met with the group to conduct a needs assessment for nutrition education in Dickson County. A \$5,000 TNCEP Grant Proposal was funded.

IMPACT: The Dickson County TNCEP Coalition (which includes members from 17 different agencies) meets regularly each month. The Coalition is led by a chairman and secretary with Extension serving in an advisory capacity. Four members participated in the 2002 State TNCEP Celebration. Coalition accomplishments include:

Portable Kitchen @ DES: A Portable Kitchen was equipped at Dickson Elementary School where 63% of the student population qualifies for free or reduced meals. A 4 hour in-service training for DES faculty was planned and conducted by Extension and Coalition members to share curriculum and provide hands-on training to encourage the incorporation of nutrition education in all academic areas. During August, September, and October, the Portable Kitchen was utilized 37 times for experiential nutrition education activities involving over 700 students.

Commodity Foods Distribution: Coalition members assembled and distributed recipes highlighting food products in the distribution during September and November. Samples were prepared by the hospital and school food service departments and served by coalition members to approximately 50 recipients at the Senior Citizens Center.

Pre-School in a Bag: The coalition provided food/nutrition related information and activities for approximately 50 4-year olds and their families participating in this program facilitated by Dickson County Adult Education.

The Coalition has written a mission statement and developed a detailed plan of action for the remainder of the current funding cycle. To date, \$9,140.93 of "in kind" match has been reported through the coalition in addition to \$3,700.48 from Extension. A value of \$1,700.50 has also been reported in "bonus match" from individuals who are supported through private funding sources or serve as volunteers.

FUNDING SOURCES: In addition to regular Extension funds, this program is funded by federal matching funds approved through the Tennessee Department of Human Services. Coalition members and other partners provide in-kind match.

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TITLE: Hamilton and Rhea Counties - Achieving Healthy Diets

ISSUE: According to the 2000 U.S. Census Data, it is estimated that 39,411 (12.8%) persons in Hamilton and 4771 (16.8%) persons in Rhea counties live below the poverty level and more than 19% (18,914) individuals living below poverty were children less than 18 years of age. Limited-resource families very often lack basic nutrition, food safety and resource management knowledge necessary to provide safe and balanced diets for their families. Menu planning/Nutrition education was indicated by the Family and Consumer Sciences Advisory Committee group as a priority program need for all ages including those families receiving food stamps.

WHAT HAS BEEN DONE: The Expanded Food and Nutrition Education Program (EFNEP) is a nutrition education program conducted by the University of Tennessee Agricultural Extension Service. Five trained program assistants and volunteers in Hamilton and Rhea counties helped low-income families and youth acquire the knowledge, skills, attitudes and behavior changes

necessary to maintain nutritionally sound diets and promote personal development.

In 2002, 350 families (1214 family members) received intense lessons in the areas of nutrition, food safety and food resource management.

Impact: Results from the Adult EFNEP survey and 24 Hour Food Recall indicates that 98.95% (156) of the 158 graduated participants showed improvements in their diets, 86% (136) of the 158 surveyed showed improvement in food resource management and 65% (103) of the 158 surveyed showed improvement in food safety practices.

EFNEP youth impact was measured by a show of hands. This survey of 1176 youth indicated that 94% (1105) increased their knowledge of the essentials of human nutrition, 94% have improved their practices in food preparation and 90% (1058) now eat a variety of foods.

FUNDING: EFNEP and collaborative efforts with: Head Start, Chattanooga Park and Recreation Centers, Samaritan Center, New Life Boys Home, Bethel Bible Village Homes, Dayton Housing Authority, Commodities, Mayfield Dairy and the Westside Community Development Center.

#

TITLE: Marion County Expanded Food & Nutrition Education Program

ISSUE: According to the 1999 United States Census Data, approximately 3,916 (14.1%) of Marion County residences lived at or below poverty level. The Tennessee Department of Human Services reports that 2,790 Marion County residences are receiving food stamps and the Board of Education states that 1,850 (44%) of Marion County students are receiving free or reduced priced meals. These limited resources families very often lack basic nutrition, resource management, and food safety knowledge necessary to provide balanced and safe diets for their families. Proper nutrition is essential for cognitive development, academic achievement and later productivity in the work force, according to a large and growing body of research. "Children who experience chronic hunger and nutrient inadequacies are not able to learn effectively and to acquire the knowledge and skills they must have to function successfully in the workforce and economy of the 21st century," according to Larry Brown, director of the Center on Hunger, Poverty, and Nutrition Policy at Tufts University.

WHAT HAS BEEN DONE: Through group meetings at Chattanooga State Regional Skills Center, Marion County Jail, The Cottage, Marion County Housing Authorities, and individual home visits, 62 adults (149 family members), received or are currently receiving a series of lessons on basic nutrition, resource management, and food safety. The participants receive 6-12 lessons depending on individual needs, time frame being 4-12 months. Participants also receive monthly newsletters and newspaper articles are published, targeting these topics.

One thousand, three hundred, thirty three Marion County youth were taught through school enrichment, special interest short-term programs, and day camps. Lessons focused on the

essentials of human nutrition, their ability to select low-cost nutritious foods and food safety.

IMPACT: 2001-2002 EFNEP Behavior Checklist and/or Surveys indicate the following:

- * 78% of homemakers showed improvement in one or more food resource management practices (i.e. plans meals, compares prices, does not run out of food or uses grocery lists).
- * 86% of homemakers showed improvement in one or more nutrition practices (i.e. plans meals, makes healthy food choices, prepares foods without adding salt, reads nutrition labels or has children eat breakfast).
- * 100% of homemakers showed improvement in one or more of the food safety practices (i.e. thawing and storing foods properly).

Summary of Youth Group Profiles Impact Indicators show the following:

- * 85% of 992 youth from 53 groups now eat a variety of foods.
- * 90% 1180 youth from 56 increased knowledge of the essentials of human nutrition.
- * 40% of 10 youth from 1 group increased their ability to select low-cost, nutritious foods.
- * 90% of 1085 youth from 55 groups improved practices in food preparation and safety.

FUNDING: EFNEP is federally funded. Additional funding has been provided by Marion County Housing Authority, The Cottage, and individuals.

#

TITLE: Healthy Diets ... Healthy Families Youth Program ... Nutrition Education

ISSUE: In Hardin County 41.2% of the students receive free or reduced price lunches and 7.3% of the pre-schoolers are in Head Start. Nutrition of youth is a prime concern since 24.7% of children are below the poverty level. Studies have shown that a lack of good nutrition for a child has a negative impact on learning capabilities.

WHAT HAS BEEN DONE: A series of 2 programs for 4th, 5th and 6th grade youth were presented in nine schools on the Food Pyramid; one educational program to 7th and 8th grade youth at two schools was presented on Food Label Information; 1 Junior High judging team was trained; and through the partnership with the school system, research based educational materials and training for instructors was provided and incorporated into the curriculum in elementary schools.

IMPACT:

- 82% of the 826 4th, 5th and 6th grade students in the first of the two part series program gained knowledge of the food groups and the recommended number of servings needed.
- 85.2% of the 896 students in the 4th and 5th grades gained the knowledge of ways to reduce

fats and sugars in their diets in the second program in the series.

- 65% of the 896 4th, 5th and 6th graders improved their eating habits in choices of snacks and fast foods to reduce fats and sugars.
- 94.8% of the 7th and 8th grade students (450 total) gained knowledge on how to read a food label and how to use the information provided. This program was worked in conjunction with the health curriculum at both middle schools.
- 1 Junior High judging team was formed with 4 members and 2 alternates. They learned menu evaluation and team work. This team was the District winner and one of its members was the high scoring individual at the District contest.

FUNDING SOURCES: Supported through regular U.T. Extension Funds.

#

TITLE: FOODS AROUND THE WORLD

ISSUE: "Undernutrition, paired with other factors related to poverty, can permanently retard physical growth, brain develop, and cognitive functioning" according to Kid's County. The USDA cites that more than one-half of people receiving EBT funding are children. On the county level (Department of Human Services), there are 1550 households or 4.25% of the population living at or below poverty income. There are two local Headstart programs serving over 100 limited-resource preschoolers. According to a survey of Headstart teachers, there is a need for multicultural nutrition education. Therefore, the Warren County TNCEP Coalition identified nutrition skill building as the focus of nutrition education for this targeted clientele with an emphasis on multicultural foods.

WHAT HAS BEEN DONE: The Extension Agent and TNCEP Program Assistant planned and implemented a series of 6 classes on "Foods Around the World" for the preschoolers in the two local Headstart programs. Educational programs were presented monthly with a different country/state food being highlighted. The book "The World in a Supermarket" was the basis for the educational classes. Information about the nutritional value of selected food and how it is grown was presented. Topic foods were bananas (Honduras), pasta & pizza (Italy), cheese (France), olives (Greece), pineapple (Hawaii), and fresh garden vegetables (Tennessee). 103 students have been reached through 36 sessions of nutrition education.

IMPACT: A post-program survey was conducted with the students to measure knowledge gain. Results are as follows.

95% or 98 students could correctly identify the topic food's origin or country.

87% or 90 students could tell how specified foods were grown.

65% or 67 students stated they would want to try these foods at home.

A follow-up survey was given to the parent of the preschoolers to determine if knowledge and food recipes were being used at home. 53 parents responded to the survey. Results are as

follows.

67% or 36 parents have made the banana/yogurt/nuts healthy snack.

56% or 30 parents have made rudolph sandwiches.

73% or 39 parents have made pizza circles.

64% or 34 parents have made cheesy caterpillars

62% or 33 parents have made fruity fellas/hula girls.

Many parents reported making these foods more than once or twice indicating a change in practice.

An end-of-the-year survey was given to all 11 teachers of the Headstart program. Results are as follows.

100% of the teachers were in agreement that the children benefitted from the nutrition program.

These teachers indicated the lessons were age appropriate and timely.

Teachers stated a need to continue the program on a yearly basis.

The Headstart teachers were asked if they tried the nutrition activities at home. Results are as follows.

54% or 6 teachers made the banana snack.

18% or 2 teachers made the rudolph sandwiches.

72% or 8 teachers made the pizza circles

45% or 5 teachers made the cheesy caterpillars

9% or 1 teacher made the fruity fella

FUNDING: Tennessee Nutrition and Consumer Education Program (TNCEP) and General Extension Funds.

#

TITLE: TNCEP Program Reaches PACE Students

ISSUE: The local Henry Co. Extension Service was looking for a new audience to find Welfare to Work and Families First participants who were also food stamp families. A contact was made to the local Dept. of Human Services for assistance. Several of the GED students and other welfare to work students are now enrolled in short term programs like PACE for additional assistance. These students get assistance, not only with food stamps and transportation, but also with child care and with resumes for work. It appears that nearly 100 percent of the classes are food stamp families or food stamp eligible. Thus they meet the criteria for this program. Many of them are mothers but several fathers also participate in the program. It reaches a diverse population that are both white and black and range in age from 18 to over 50.

WHAT HAS BEEN DONE: Extension FCS agent made a contact with DHS to see about the possibility of offering foods and nutrition education classes for the PACE students. She made a contact with the teacher, Cathy Lowe. Ms. Lowe was invited to join the TNCEP coalition and see what our TNCEP resources could do for her class as well as to see the benefits of the education for food stamp families. It was decided that they would team teach a three session unit each time the class was offered in Henry County. This year the focus was on food safety, reading food labels, awareness of the excessive amounts of sugar and fat in fast food, and snack food choices. All of these concepts would be valuable to adults as well as youth and other family members. Pre-tests helped to determine the skill level of class members. Post tests were used to evaluate knowledge gained and attitudes changed.

IMPACT: A followup evaluation of the 27 students (3 class sessions were attended by each student) who were taught in 9 different class sessions (groups of approx. 10 per session) showed the following results:

- *80 percent realized that America is the fattest country per capita in the world.
- *65 percent could recognize another word for sugar on a food label.
- *30 percent will try to use applesauce as a fat substitute in recipes.
- *82 percent could tell you four or more items that a food label has.
- *40 percent stated they would try to reduce their purchases of chips for snacks as a result of this class.

A survey of the teacher showed that her class enjoyed the hands on sessions with games and creating recipes. She wishes we had a larger space so more could participate. We are limited to a very small classroom. Also, she stated that, "her students realized that they were paying for fat when they supersized items at drive through windows," as a result of the programs on fast food and eating out.

FUNDING: Tennessee Nutrition Consumer Education Program Grant (TNCEP), County Funding, Univ. of Tennessee Extension Funding.

#

TITLE: Foods and Nutrition Reaches the Community

ISSUE: There are over 30,000 people in the Henry County area. Only 60 percent have a GED or high school diploma so the educational level is below normal for the U. S. Residents need educational assistance to make healthy food choices that relate to their present and future good health. A needs assessment showed that lack of knowledge related to serving size, snacking, poor fast food choices, and general lack of foods and nutrition knowledge were the concern areas. Extension knew that they could not educate the entire community on such a broad issue. However, to select targeted groups and work with them and hope that they would teach others is the component of this emphasis. Groups to be targeted for teaching sessions included jr. high youth, FCE club members, Special Needs Adult groups, Early Elementary youth and the TNCEP

Coalition members. It was thought that these groups were representative of the general public and were diverse in race, educational level and age.

WHAT WAS DONE: Extension FCS agent researched, planned and wrote lessons suitable for each audience. Handouts were produced and resource materials were acquired with the help of TNCEP funds. Some resources used county funds. Following an assessment using the Advisory FCS group, the following topics for delivery were selected: hidden sugars, serving size, snack bites, food safety ,diabetes awareness, and eating more fruits and vegetables. Creative approaches were used to address each of these topics in an effort to use a hands-on-approach to learning about these healthy choice issues. The Extension FCS agent worked closely with the 17 members of the TNCEP coalition and encouraged them to use TNCEP resources to teach the 6 above selected topics so as to have a community seamless nutrition effort. Made contacts with the two school boards and superintendents to be able to conduct nutrition education classes for first and second grade students in the schools. Worked with school wellness coordinator to utilize TNCEP volunteers at third grade health fairs to teach nutrition education. Published 3 food safety news articles in our local daily newspaper. Presented a total of 7 special interest foods and nutrition programs to other groups than the selected targeted groups to reach a total of 97 other participants. Assembled a holiday helps and recipes booklet that was distributed to over 450 persons with senior food safety hints included. Wrote 4 general foods news articles for the general public to keep them informed as to Extension's dedication to good health and good nutrition for our citizens. Presented program to FCE clubs with 82 participants in January on serving size. Participated in local diabetes awareness program with Henry Co. Medical Center to reach over 59 persons with diabetes and choosing better snack foods. Collaborated and guided the TNCEP Coalition in hosting in a health fair for commodity food recipients (20 percent are minority) where they were shown ways to better use their commodities in healthy recipes. Trained FCE leaders to conduct another foods and nutrition program this year to 90 or more FCE members on the calories you can get from just adding a few bites of food throughout the day to your diet. Multi session classes were held for first and second grade students on Coalition selected important educational topics.

IMPACT: A survey of FCE leaders and members showed that :

- *85 percent have improved their knowledge related to serving sizes of food.
- *77 percent gained useful information related to diet and nutrition.
- *42 percent planned to change their habit of snacking on small bites of food throughout the day.
- *62 percent have changed some of their food safety practices related to food storage.

A total of over 700 youth in grades 1-2 participated in three foods and nutrition sessions.
A total of 11 participants in the diabetes awareness day have asked for additional information related to diabetes.

FUNDING: Henry Co. Government and the Univ. of Tennessee Extension Service.

#

TITLE: Jr. Chef

ISSUE: According to Review of What American Children are Eating, 1995 U.S. Dept. of Agricultural, Center for Nutrition Policy and Promotion, among pre-kindergarten and elementary school-age children in the U.S.:

- *35% do not eat fruit daily
- *20% do not eat vegetables daily
- *27% are considered obese
- *90% consume fat above the recommended level

Recent scientific research links eating habits with a variety of chronic disease, such as heart disease, cancer, hypertension, diabetes and obesity. Early experiences with food are very important in forming lifelong attitudes and eating habits.

WHAT WAS DONE: Jr. Chef Cooking School was presented in June in seven (7) sessions. The audience was summer child care program with 33 students on the roll. The average attendance of the sessions was 15-18 students. Different students attended several of the sessions. The objectives of the class, importance of washing hands, keeping items (tables, food etc.) clean, children to try new foods, improve students' ability to read and follow a recipe, students to learn to cooperate with each other and improve the students' ability to make their own snack or help in the kitchen.

- Session one: Ice Cream in a Bag
- Session two: Nibbling Fish (Trail Mix)
- Session three: Pumpkin Muffins
- Session four: Fruit squares
- Session five: Frozen Strawberry Yogurt
- Session six: Tacos
- Session seven: Cupcakes

Professor Popcorn curriculum and other resources purchased by TNCEP were used.

IMPACT: Fourteen students completed a survey/evaluation.

- 14 -14 plan on making Ice Cream in a Bag at home
- 12-14 plan on making Trail Mix at home
- 13-14 plan on making Frozen Strawberry Yogurt at home
- 13-14 plan on making Tacos at home

The students did not like the Pumpkin Muffins or the Fruit Squares. These foods were made without added sugar. The students even joked that they needed sugar to make the snacks good. Which lead into a discussion concerning amounts of sugar and fat in food and added sugar and fat. The fat, sugar and salt vials, purchased by TNCEP were used to help demonstrate the principle. Students learned and practiced hand washing techniques and keeping everything that

touches food clean. Students reported that they plan on making several items at home, students also reported that they increased their ability to follow a recipe and teachers reported increased cooperation with the students after and during cooking sessions.

FUNDING: TNCEP Tennessee Nutrition and Consumer Education Program.

#

TITLE: Expanded Food and Nutrition Education Program
SPIFFY (Special Programs In Food For Youth)

ISSUE: Recent research indicates that youth across the country are flunking healthy eating. Some of the most troubling indicators reveal that:

- * Only 2 % of youth meet all the recommendations of the Food Guide Pyramid; 16% do not meet any recommendations.
- * Less than 15% of youth eat the recommended servings of fruit, less than 20% eat the recommended serving of vegetables; about 25 % eat the recommended servings of grains and only 30% consume the recommended milk servings on a given day.
- * Only 16% of youth meet the guideline for saturated fat on a given day.
- * Teenagers today drink twice as much carbonated soda as milk and only 19% of girls ages 9-19 meet the recommended intakes for calcium.

WHAT HAS BEEN DONE: It is a real challenge for the Knox County SPIFFY to create an enticing nutritional enrichment program that can be presented in thirty minutes which includes on-hands activities for the youth. Each year approximately 1200 4th grade students and teachers are evaluated to find the strengths and weaknesses of the program. New ideas surface each year. The overwhelming fact----youth like on-hands activities. The three primary education areas, nutrition knowledge, food safety and resource management, are taught to approximately 60 classrooms per month for eight month of the school year. Since the 4th grade is our concentrated audience, only a few are repeat youth, therefore, some of enrichment programs and activities are taught the same each year. And the youth love it. Examples of these activities are the making of butter, growing their own herb garden, making folding pyramids and always SPIFFY newsletter activities. During the summer, youth are worked with in a more laid-back approach which allows more time for individual attention. Cooperating agencies are Knox County Schools, CAC Summer Feeding Programs, Church Organizations, Recreation Centers and any community group that request our services. Similar nutritional enrichment programs are conducted and food demonstrations are preformed by the youth and, of course, they get to taste the end product.

IMPACT: As a result of the nutrition SPIFFY nutrition enrichment program: Of the 1208 youth from 56 groups:

- * 89 percent increased their knowledge of nutrition.
- * 83 percent selected a variety of foods and learned the importance of the variety.

- * 84 percent increased their ability to select low-cost, nutritious snacks.
- * 90 percent improved their food preparation and safety knowledge.

FUNDING: EFNEP, University of Tennessee, Agricultural Extension Service.

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TITLE: Health and Wellness Project Group continues in Bradley County

ISSUE: Extension Staff continues to recognize the need among Bradley County youth for better nutrition and wellness skills. According to the 1999 Youth Risk Behavioral Survey, an estimated 12% of students in grades 9-12 in Tennessee are overweight. " For many children, fast food is replacing physical activity," says Health Commissioner Freida Wadley, MD. " Adolescents are three times as likely to be overweight now than 20 years ago." The Centers for Disease Control and Prevention estimates that as many as twelve percent of school-aged children in the United States skip breakfast, two-thirds exceed the dietary guidelines for fat intake, and only one out of five children eats the recommended five servings of fruit and vegetables a day. Further research in this area of youth development specific to Bradley County showed that 83.4% of residents admit to leading a sedentary lifestyle, 70.3% eat few fruits and vegetables, and 32.4% of Bradley County residents are considered obese.

WHAT HAS BEEN DONE: Monthly meetings of the project group are held at the Bradley County Agricultural Extension office. Activities include hands on cooking, exercise at each meeting such as aerobics, kick boxing, and walking, and educational lessons. These educational lessons include things such as: Vitamins our bodies need, table manners, carbohydrates, moderation, and basics of food preparation.

IMPACT: The Bradley County Health and Wellness Project Group has had many positive effects on the 4-H'ers that participate. Several of the project group members get together and walk weekly. The group has many active members and new members are being actively recruited in 4-H clubs in January. The 4-H Food and Nutrition judging team is pulled from the membership of this project group. This team placed second at the Cumberland District contest in 2002. Several members agreed to take the 5-a-day challenge and stuck with it for a whole week. One project group member is interested in a career as a dietician because of her participation in this project group. Some comments listed on last years evaluation are: " I had no idea that learning about nutrition could be so fun!" and " Now I know that I can cook for myself when I need to." Lastly, on a nutrition test given at the end of the year we had an average of 77.8% correct. This was a cumulative test given on all the information learned last year.

FUNDING: Tennessee Nutrition and Consumer Education Program (TNCEP) and Regular Extension Funds.

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TITLE: Improving Nutrition and Accessibility to Health Care

ISSUE: The Census 2000 Report reveals approximately 13% of people in Coffee County live in poverty. Close to 1,500 families receive food stamps and 3,000 school-age youth receive free and reduced lunches. Census data also reveals a 305% growth of the Latino population in the past 10 years. These numbers are believed to be low, and a misrepresentation of the true Latino population. Demographic changes caused by Mexican immigration has created linguistic and cultural barriers that have limited health care access by new immigrants. Few local health care, social services and public service workers can speak Spanish and few immigrants can speak English. These barriers create additional economic burdens for employers and rural economics when immigrants are too ill to work. The Coffee County Family and Consumer Sciences (FCS) Advisory Group identified health and nutrition as critical areas for education for families living in poverty or with limited resources.

WHAT HAS BEEN DONE: FCS Agent assisted the Extension Health Specialist and Bedford County FCS Agent in securing and managing a \$600,000 USDA Fund for Rural America grant. Agent also served as the Coffee County, Tennessee Nutrition and Consumer Education Program (TNCEP) Coalition Lead Agent and secured \$5,000 (\$7,500 match) in funds for nutrition education for food stamp families. Agent completed two, conversational Spanish college courses.

Program partners include Kentucky State University, the University of Kentucky, Coffee County and City schools, TN Department of Human Services, TN Health Department, Harton Regional Medical Center, Centers for Family Development, Centerstone Mental Health Services, Partners For Healing Clinic, Agencies Serving Kids, Tullahoma Housing Authority and the Family Resource Centers. Program promotion included 18 newspaper articles, 12 educational exhibits, 2 health fairs, 200 letters sent to health care and social service professionals, a cooking school and nutrition day camp for minority youth.

A 61 member, Bedford-Coffee Latino Health Coalition was formed as a result of nine coalition building meeting. Agent assisted in coordinating the recruitment of eleven professionals to participate in a 40-hour Spanish class locally, as well as two health care professionals to participant in a 4-week Spanish Immersion Training in Morelia, Mexico. A community development specialist from Kentucky assisted coalition in completing an asset mapping as part of the community needs assessment. Agent coordinated on-site visits with community health care centers and Latino focus groups to further facilitate needs assessment. Agent served as moderator for the first annual multi-state coalition conference.

Educational programs included a 6-hour early nutrition education, train-the-trainer for Kindergarten teachers with 50% or more students participating in the free or reduced lunch program. Approximately \$4,000 in handwashing and nutrition teaching materials and learning centers were received by 25 teachers who completed the training and pledged to teach a minimum of 12 hours, nutrition and handwashing education to food stamp students.

Program Impact:

Latino Health Care Access:

- 61 professionals formed the Bedford-Coffee Latino Health Coalition.
- 61 professionals developed an awareness of the needs of Latino families.
- 11 health care professionals reported an increase in language skills through completion of a 40-hour Spanish class.
- 11 health care professionals reported an increase in awareness of cultural and linguistic diversity of Latino immigrants.
- 2 health care professionals reported an increase in knowledge of Spanish culture and language through completion of a 30-day immersion training in Morelia, Mexico.
- 1 health care professional demonstrated Spanish skills gained through English as a second language class instruction.

Nutrition Education (post survey of 160 food stamp youth):

- 48% tried eating a new foods.
- 49% were eating a greater variety of foods from each food group.
- 43% were eating more fruits, vegetables, whole grains, or dairy products.
- 93% adopted recommended handwashing practice before and after handling food, after going to the bathroom, after playing with pets and being around someone sick.

Personal comments made by participants:

The Immersion training in Morelia made me much more sensitive and compassionate to the needs of our Hispanic families.

I didn't realize just how much Spanish I had learned in Mexico until I came back to the U.S. and was able to speak more fluently with my patients.

The children are washing their hands more thoroughly before lunch and have started reminding each other to wash after sneezing, coughing or using the bathroom. The students were amazed that they liked so many of the foods that were new to them.

Several of my pickiest eaters loved eating broccoli and dip! They continue to draw and write about the food Groupies in their journals!

FUNDING: Tennessee Nutrition and Consumer Education Program (TNCEP) grant: \$5,000 with \$7,500 in matching funds. USDA Fund for Rural America 4-year, \$600,000 grant.

KEY THEME - HUMAN HEALTH

TITLE: Arachidonic Acid and Downstream Signaling in Intestinal Cancer

ISSUE: N-3 fatty acids are found in appreciable amounts in soy and canola oils, as well as fish oils, and have been shown to protect against intestinal cancer.

WHAT HAS BEEN DONE: The objectives of this research are to test the hypothesis that intracellular calcium concentrations $[Ca^{2+}]_i$ is important in tumorigenesis and PGE₂, a metabolite of arachidonic acid (AA), impacts intestinal tumorigenesis in vivo by modulating $[Ca^{2+}]_i$. I plan to address these objectives with the following specific aims. 1. Determine if NSAID-induced increases of intracellular concentrations of AA induces apoptosis in intestinal tumors. 2. Determine if sequestering PGE₂ levels in vivo will inhibit intestinal tumorigenesis. 3. Determine if inhibition of PGE₂ biosynthesis alters apoptosis/mitosis ratios and if these effects can be reversed in presence of PGE₂ receptor agonists (EPRA). 4. Determine if NSAIDs induce tumor regression by modifying $[Ca^{2+}]_i$ and whether these effects are associated with PGE₂ receptor activation. 5. Determine which of the four PGE₂ receptors are responsible for changes in $[Ca^{2+}]_i$ and tumorigenesis.

IMPACT: This research is just beginning and no publications have been reported as of this date.

FUNDING: Hatch

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TITLE: What do you really Know about Tobacco?

ISSUE: At a younger and younger age, our youth are experimenting with tobacco products. An informal survey of the Middle School audience (7th -8th grades) revealed that 66% had already tried cigarettes, or chewing tobacco products. A 1998 Trousdale County Health Council survey identified one of the most prevalent county youth risk factors to be tobacco use.

WHAT HAS BEEN DONE: February 2002, 4-H initiated a program on "What do you really Know about Tobacco?" using exhibit format, showing the 3000 chemicals present in tobacco smoke. A set of cancerous pig lungs was also displayed along with Mr. Gross mouth model showing the dangers of chewing tobacco, and oral cancer. A discussion, question and answer lecture format discussed all the health implications of tobacco products. Each 7th and 8th grade student in the county was presented the program.

IMPACT: A pretest/post-test evaluation determined that 83% of the teens had no idea how many chemicals were in cigarette smoke. 100% were aware that tobacco can cause cancer. Many youth felt they could quit smoking anytime if they wanted to. Youth feel invincible to certain dangers they can't see. Immediately after the program 64% said they would refrain from using tobacco products. The next week one of the 7th graders met me in the hall and was so excited. He said, "Mrs. Allan, guess what?" I had no idea what he was going to tell me. He continued, " after your program last week, I talked to my Dad and he's agreed to finally quit

smoking. He is using the patch already." Isn't it good to know in 4-H, some things still remain the same. As the "corn club" boys taught their fathers how to plant corn, now 4-Hers can teach their parents not to smoke.

FUNDING: Cooperative Extension funding

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TITLE: Diabetes Education

ISSUE: Wayne County Health Council has identified diabetes as a major health problem in our county. According to CDC statistics 6% of the population have diabetes. Every year more than 160,000 will die from the disease and its complications. The good news about diabetes is that it can be managed with early detection, self-management, and by following preventive practices. Diabetics need to get vaccines for influenza and pneumonia. Only 10% of the Wayne County population received the influenza vaccine and only 6% the pneumonia vaccine. Diabetes is the 6th leading cause of death in Tennessee and \$1 out of every \$7 is spent on Diabetes. (Healthy living with Diabetes)

WHAT HAS BEEN DONE:

1. Extension cooperated with Health council Diabetic Sub-committee and applied for and received a \$5000 grant.
2. Twenty participants enrolled in a 12 week course "You and Type II" Diabetes.
3. Extension provided educational seminars and three cooking schools for participants.
4. Extension helped with seminars on prevention and self-care for diabetics & sent newsletter to 100 diabetics.

IMPACT:

91% (10-11) gained skills in carbohydrate counting
91% did count their carbohydrates
82% (9-11) lowered their blood sugar by diet and exercise
100% (11-11) increased their exercise by 3 hour per week

Evaluative comments such as the following were shown in post evaluation:

"This program lifted my spirits and outlook on life."

"I feel better."

"Improved my health."

"A great program."

FUNDING: \$5,000 CDC Grant, TNCEP funding and Extension funding.

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TITLE: Build Healthy People

ISSUE: According to the National Center for Health Statistics, results from the 1999 National Health and Nutrition Examination Survey indicated that an estimated 13% of children ages 6-11 and 14% of adolescents ages 12-19 are overweight. These results show a 2% to 3% increase from Overweight youth estimates in 1988-1994. Surveys from earlier years (1960-1976) were relatively stable; however, in 1976-1980 the prevalence of overweight children and adolescence nearly doubled. One of the national health objectives for 2010 is to reduce the prevalence of overweight youth to the baseline of 11%. According to Phil Shanholtzer at the Federal Interagency Forum of Child and Family Statistics, 88% of children ages 6-12 and 94% of children ages 13-18 had a diet that was poor or needed improvement. 1 out of 5 children ages 13-18 have a poor diet. Also, children in poor families are more likely to have a diet rated poor or needs improvement than those children from middle or high income families. Research shows that overweight adolescents are at increased risk to become overweight adults and may be at risk for obesity related health conditions. Exercise must begin at an early age to help prevent weight gain and increase weight loss among overweight youth. Target Audience: Elementary, Junior High and High School students. The target audience will be mainly inner city youth; however, white, Hispanic and Asian youth will be reached as well.

WHAT HAS BEEN DONE/IMPACT:-Conducted 5 special interest Food Guide Pyramid programs with students between the 9th-12th grades. As a result of these programs, 75% of these students identified the 6 major food groups.

-Conducted 10 special interest Healthy Snacks programs with students between the 9th-12th grades. 75% of students were able to identify healthy snacks.

-Conducted 5 special interest Where to find Health and Nutrition Information? programs with students between the 9th-12th grades. 90% of students were able to list one resource regarding health and nutrition information. Students were educated on resources that produce reputable information. Information gathered was in effort to produce an essay focusing on health and nutrition.

-Conducted 5 Health and Nutrition Essay and Public Speaking Contests with student between the 9th-12th grades. 30% participated in the contest where students were top winners were awarded with t-shirts, food coupons and pencils.

-Conducted 5 special interest Manners Matter programs with students between the 9th-10th grades. 50% of students observed were able to identify to proper use of manners.

-Conducted 5 special interest Meal Plan programs with students between the 9th-12th grades. 75% of students were able to develop a healthy meal.

-Conducted 5 special interest Food Guide Pyramid Servings program with students between the grades of 9th-12th grades. 40% of students were able to list the correct amount of servings in

each food group.

-Conducted 5 June Dairy Month Promotion programs with students between the 9th-12th grades. Students were educated on Tennessee Dairy Facts, milk and calcium. 50% of students were able to identify one or more facts about the Tennessee dairy industry.

-Conducted 38 local bread baking contests in 2 Memphis City Schools, 1 private school and 1 county school. Students were between the grades of 4th-8th grades. Students were educated on various types of recipes and safety food handling techniques.

-Conducted 1 Shelby County Bread Baking contest which included 75 students between the grades of 4th-12th.

-Conducted 1 Food Guide Pyramid session with youth at the Baptist Children's Home. A total of 10 youth participated in the session. 90% were able to identify the 6 basic food groups and servings in each group.

-Assisted with TNCEP programs at 2 local libraries. Programs consisted of FOODS AROUND THE WORLD. A total of 20 youth between the ages of 5-10 were educated on the various types of food from around the world. Hands on demonstrations and videos were used to implement the programs.

-Conducted 1 week Fitness Camp at 1 local community center. A total of 152 youth between the ages of 5-15. 7 Community center counselors assisted with organization of youth. A total of 152 Stretching Exercises books were developed and given to camp participants. 95% youth participated in stretching exercises and aerobics for 1 week. Through observations 75% of students identified the 3 components of the fitness triangle. 40% of program participants were able to check their pulse. Camp participation was primarily inner city youth.

-Conducted a June Dairy Month Poster Contest for youth between the 4th-12th grades. A total of 2 news releases were submitted to local media sources. A total of 200 flyers were distributed throughout Shelby County. Target audience is based on all youth in Shelby County. A total of 30 posters by students between the 10th-11th grades (3WF, 20BF, 7BM) participated in the poster contest. SUDIA sponsored the prizes which included got chocolate milk? t-shirt, brief case and lunch box.

-Conducted 1 Shelby County Outdoor Meat Cookery Contest. 5 youth between the grades of 5th-11th participated in the reorganized contest. 100% youth demonstrated safe food handling techniques.

-Promoted Seessel's Pillsbury Kid's Bake Off Contest in 1 Memphis City School, 1 Shelby County School and to approximately 50 youth throughout Shelby County. A total of 10 Shelby County youth participated in the preliminary contest. 3 out of 10 youth were selected to compete in the final competition. A total of 3 out of 20 finalists were from the Shelby County 4-H

program.

FUNDING: Supported through regular Extension Funds

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TITLE: Diabetes Seminar

ISSUE: The Community Health Status Report, compiled by the Hawkins County Health Council, identified risk factors for residents. Findings showed that residents have a sedentary lifestyle which is partnered with low consumption of fruits and vegetables, smoking, and obesity. The Tennessee Department of Health identified diabetes as the 7th leading cause of death in Hawkins County. Therefore, the Hawkins County Health council identified diabetes as a priority health concern.

WHAT HAS BEEN DONE: Extension, in cooperation the Diabetes Subcommittee of the Hawkins Council Health Council, planned and conducted a 4-session seminar on diabetes with the focus on dental care, exercise, nutrition, kidney disease, depression, foot care, and OTC drug interactions. Rite Bite mini sessions with snacks was a component of each seminar. A grocery store tour was conducted as an added session for participants. 47 persons registered for the seminar and 22 attended all four sessions. 12 persons participated in the grocery store tour.

IMPACT: A follow-up survey indicated the following changes made:

- 33% to check their blood sugar regularly
- 32% to keep blood sugar records
- 32% to increase exercise
- 50% to follow a meal pattern and/or Food Guide Pyramid
- 60% to choose foods with less sugar
- 61% to choose foods with less fat
- 55% to prepare foods in healthier ways
- 46% to modify recipes to fit into meal plans
- 40% to measure portion sizes or can identify portion sizes of foods

Grocery Store Tour:

- 100% of participants said they understood the labels on foods better
- 100% said they will be able to make better selections at the grocery store

Written comments about what they learned from grocery store tour:

- Pay more attention to labels
- Difference between low-fat and 2% milk
- Reading all that's on the label

To look for carbs, not just sugar
Will know that all fat free is not good for you
Different things about cheese
Meat serving size

FUNDING: TNCEP Grant, collaboration with Hawkins County Health Council State Diabetes Grant, Hawkins County Health Department

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TITLE : Diet and Health

ISSUE: Recent research indicates that youth across the country are flunking healthy eating. Less than 15% of youth eat the recommended servings of fruit and less than 20% eat the recommended servings of vegetables on any given day. The pyramid is out of balance with more youth eating from the top of the pyramid. The Claiborne County TNCEP coalition, Health Council, Senior Citizen group and parents identified nutrition and health education as a great need for the county.

Eating the recommended amounts of foods from the Food Guide Pyramid would insure an adequate diet for all age groups, and would improve health and help to reduce the growing health problems that can be caused by an inadequate diet.

WHAT HAS BEE DONE:

- * Eat to Win - This program targeted 6th grade students in the Claiborne County School system. A different lesson on diet and its relationship to good health and athletic performance was taught each month for six months. A total of 437 students participated in this program.
- * Nutrition Education Classes - A series of 4 classes were taught to parents of young children. Topics included planning meals using the pyramid as a guide, food safety and sanitation, feeding young children, and smart shopping.
- * Four Nutrition and Health lessons were presented to the two Senior Citizens Centers. Topics included Food Safety, Importance of a Healthy Breakfast, Eating Healthy while eating out, and preparing meals for one or two.
- * Cooking is Fun - Four hands on cooking classes were held at two locations for students in 3rd and 4th grades. Each class taught the children to make nutritious snacks or simple meals.
- * Food, Money and Your Family's Health was taught twice to Families First basic education students. Topics covered included budgeting the family food dollar and preparing simple nutritious meals for families.
- * Nutri-News - was published three times and distributed to 2,500 parents of young children (preschool through 3rd grade).
- * 19 Kindergarten through Second grade teachers have been trained to teach the Food, Fun and Reading curriculum to their students.
- * Healthy Snacks - 440 fourth grade students participated in a lesson on Healthy snacks.

Emphasis was placed on eating a variety of snacks from the 5 major food groups in the pyramid instead of overloading on snacks from the top of the pyramid.

* 200 Seventh grade students were taught two lessons on health and fitness. Emphasizing eating a variety of foods from the pyramid especially fruits and vegetables and label reading.

IMPACT:

* 15 participants in Food, Money and Your Family's Health learned to prepare healthy meals for their family, 12 participants learned how to better manage their food dollar.

* Results of pre-post test evaluations showed that 36% of students in the sixth grade increased knowledge of the relationship between diet, exercise and overall health.

* 88 students learned to prepare simple snacks and meals in two (2) four day cooking schools. 19% of parents reported that their child had prepared foods at home that they had learned to make during the cooking schools. 158 campers learned to prepare nutritious snacks by making snacks in a hands on class where they made fruit smoothies, nifty nachos, and snack pizzas.

* 8 parents in Nutrition Education classes learned to classify foods in the food groups and learned food safety and handling procedures.

* 2000 children in kindergarten through second grade received Go, Glow, Grow books as part of a nutrition education partnership with the schools and TNCEP. 15 teachers taught nutrition lessons to 330 students.

* 250 students were taught the importance of washing their hands to prevent the spread of disease. 3 of the classrooms where this was taught students have missed less school due to being sick.

* 330 students are learning about healthy foods through participating in Food, Fun and Reading classes.

* 25 students participated in a Food Fest after-school program where they learned to prepare 8 simple and inexpensive snacks.

* 50 Senior Citizens have learned the importance of fighting bacteria in preventing food borne illnesses. 50% of them have reported making a change in the way they handle leftovers and food taken home from restaurants.

FUNDING: Funded through regular Extension and TNCEP grant

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TITLE: Health Fair 2002

ISSUE: According to the Franklin County Community Diagnosis Report, cancer, high blood pressure and heart conditions were prioritized issues for strategic planning purposes. Requests were made by Be-nev-o-lents Club members for assistance in conducting an educational program for members and citizens of the community to seek education and information about health issues relative to Franklin County citizens.

WHAT HAS BEEN DONE: Health Fair 2002, July 24, 2002. This year marked the third annual

Health Fair co-sponsored by the UT Agricultural Extension Service, Southern TN Medical Center and The Be-nev-o-lents Club, a minority service organization. This year's fair featured 15 educational booths (eye care, osteoporosis, assisted living, nutrition, diabetes, medications, blood pressure screening, chiropractic therapy, breast cancer, oxygen blood level testing, body fat analysis, mature worker program, hearing screening, physical therapy, height and weight) and 3

speakers focusing on hearing/hearing aids, mammography, and strengthening through the years (physical therapy and the importance of exercise). A planning committee composed of three Be-nev-o-lents club members, two hospital representatives and myself plan and coordinate the event. 101 participants registered during the fair. This is a 45% increase over the 56 participants registered during 2001.

Evaluations were conducted after each speaker. Evaluations indicate:

Strengthening Through The Years: 29 surveys returned,
21 -participate in regular exercise i.e. Walking, water aerobics, stationery bike

- 8 -do not exercise regularly
- 26 -learned tips about exercising- exercise improves ability to fight disease, more exercise/more often, sugar & salt are a concern, need correct footwear for exercising and walking.

Mammography: 29 surveys returned,
26 -had no breast cancer
18 -conducted regular self breast exams
12 -conducted self breast exams monthly
3 -conducted self breast exams weekly
3 -conducted self breast exams yearly
1 -conducted self breast exams daily
9 -plan to start conducting self breast exams
19 -participate in yearly mammograms

Hearing/Hearing Aids: 27 surveys returned,
13 -said yes to having problems hearing
1 -wore a hearing aid
27 -learned tips on hearing- different losses, no repair for nerve damage.

FUNDING: Extension Funds

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TITLE: Health Wellness Program for Youth

ISSUE: Greene County youth need educational programs to help them develop a healthier lifestyle mentally and physically. Adolescents are overwhelmed by the demands of their busy schedules and peer pressures that are facing them. Extension can help by educating youth about stress management. Also, our youth have poor eating habits that may lead to significant nutrition deficiencies and imbalances among today's teens, with over consumption of fat and insufficient consumption of fruits and vegetables. Our youth need to be better prepared for life by having hands on experience with preparing food, making healthy choices, and becoming more physically active.

WHAT HAS BEEN DONE: The Extension Agent developed several handouts that were given to the 4-H'ers during in- school and after- school clubs that had healthy snack suggestions, fitness tips and an Exercise Mix Up game to reinforce the educational program given. The Agent and 4-H Program Assistant delivered the Adolescent Health lessons throughout the school year. The students were active participants in listing what they have eaten in the last twenty four hours on a paper plate and openly discussing what food groups that food represents. During discussions of healthy eating now can effect your health later, several teachers got involved. Students were evaluated at the end of the year.

IMPACT: 95 percent of participating 4-H'ers reported that they feel like they are more familiar with the Food Guide Pyramid. 67 percent said that they try to choose foods from the Food Guide Pyramid. 98 percent said that they were concerned about their health and their families health, and that they realize that the choices we make now will effect our health in the future. 100 percent reported that healthy eating was up to them and no one else. 55 percent said that they plan to pay attention to food labels when selecting a snack. 72 percent said they realized that there was no "good" or "bad" food, that it was a balance of what they ate in a week that mattered most. 68 percent reported that they planned to stay physically active to stay healthier and to help reduce stress.

FUNDING SOURCES: General Extension Funds and TNCEP grant

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TITLE: A Healthy, Well-Nourished Population

ISSUE: Living in poverty and being undernourished or at a high health risk are closely related. Providing the food resources meets only part of the need. Assisting persons in utilizing the help that is provided by understanding the stresses of the life of the poor, and acting in accordance with that understanding enhances the use of the services provided.

WHAT HAS BEEN DONE: The Area Specialist is trained in conducting the simulation A month in the State of Poverty. The Area Specialist has conducted two simulations with the following agencies:

55 state Juvenile Court Workers - Johnson City
50 members of the Tennessee Council of Social Workers-Chattanooga

In the simulations, all participants reported gaining knowledge of the plight of the poor, and attitudes were influenced. All the participants planned to change their behavior when they dealt day to day with the poor with whom they come in contact. This data was gathered by observation and verbal responses and comments in the debriefing at the end of the simulation. In an email survey and direct mail survey conducted 4 months after the simulation, fifteen participants responded:

15 changed their behavior when dealing with the poor.
I now view them as human beings - not just the situation.
I am more considerate.
I have gained understanding.

15 reported that the simulation was worthwhile....provides a place to recognize the problems in a lighter atmosphere yet get the full impact... They can't just end the session and walk away.

15 have recommended the session to others and shared the experience.

FUNDING: TNCEP: Tennessee Nutrition Consumer Extension Program

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TITLE: Health/Arthritis and Osteoporosis

ISSUE: Bledsoe County has higher than the state average receiving food stamps and children receiving free/reduced lunches. Also, a significant elderly population receives food stamps and lives on a fixed income. Only 14.8% of Tennessee children drink 3 or more glasses of milk a day and only 25.4% participate in P.E. activities for at least 30 minutes on 5 or more days a week. The Tennessee Arthritis Foundation reports 1 and 1/2 million adults in Tennessee have one of the 120 forms of arthritis and fall related injuries (often caused by osteoporosis) are the leading cause of death in adults over 65.

WHAT HAS BEEN DONE: Extension agent attended Arthritis Self-Help in-service to become certified as an instructor. Presented a program to Pikeville Sr. Citizens Center on arthritis and osteoporosis. Introduced the Self-Help program to initiate planning. Center put off classes until March 4, 2003 because of the winter months causing problems for their clientele. Agent also presented program at 6 FCE Club meetings to encourage interest and educate members to the diseases and the benefits of the Self-Help classes. Agent has been in contact with the Arthritis Foundation to order books and take steps to comply with their regulations for classes. This process is on-going to date. Agent conducted 3 Food Fiesta's in the 3 county elementary schools in the spring of 2002. These reached about 350 children with educational activities covering calcium, healthy snacking, and lowering fat in their diets. Another Food Fiesta was held for

Junior 4-H Camp and all campers (about 450) attended the classes. Agent also promoted June Dairy Month, held a dairy foods contest (adult and youth), provided an educational display at June Dairy Day, helped the 4-H Dairy Chairman with exhibits and educational materials, and conducted 2 day camp classes on calcium-rich foods for the Family Resource Center. Agent also wrote 4 health related news articles for the county paper and one exhibit for the Senior Citizen Health Fair with handouts.

IMPACT: Awareness of the Arthritis Self-Help classes to be held in the county.

At the time the no evaluation tool had been developed for the Food Fiesta Program. Teachers in 2 schools expanded the sessions in their classes after the fiesta with the materials we had given them to reenforce the programs conducted in the fiesta esp. in the area of calcium, lowering fat and healthier snacks. Several teachers had students write what they have learned and what they liked/disliked about the program. We received copies of about 20 students comments. Comments included:

I learned that I can make a milk shake;
I learned I need calcium in my diet to build bones;
and several I didn't like the shake - no bananas we want
strawberries.

FUNDING: Extension Funds; Arthritis Self-Help charges \$20 per person for books; TNCEP, Bledsoe County Senior Citizens Center.

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TITLE: Food, Health, Nutrition and Food Safety

ISSUE: According to a 2001 study conducted in Dyer County, one in every three children are considered obese. One in five children in the U.S. is now overweight or obese. Teens are not getting enough calcium in their diet , 85% of teen girls and 60% of boys failed to meet the RDA of calcium. Also, 80% of adolescents do not eat their five fruits and vegetables a day. Tennessee ranked 14th in the United States for having the most food insecure households. The Youth Surveillance Behavior Survey conducted in Tennessee indicated that 14% of teens are at risk for becoming overweight and 13% already are overweight. Approximately 75% of teens do not participate in moderate physical activity. The average American child spends 24 hours each week watching television, not including playing video games, watching movies or working on the computer. Childhood obesity can cause many health problems such as high cholesterol, high blood pressure, diabetes, and osteoporosis at an early age or in adulthood.

WHAT HAS BEEN DONE: At Kid's Club in the Dyersburg Mall, 193 children learned how to make hard cooked eggs. Approximately 500 children traced their hand during 4-H club meetings to find out how many fruits and vegetables they consumed the day before. Students were asked to recall the ABC's of fruits and vegetables. For example all fruits and vegetables that begin with the letter A and complete the alphabet. Programs were conducted at three different feeding

sites in Dyer County and 192 students were taught cow facts and they learned to make a milk shake.

IMPACT: Surveys reveal that 41% of students ate a combination of 5 fruits and vegetables the day before the survey was given out. The rest of the participants (59%) ate less than five fruits and vegetables. A majority of the students could name at least 20 and the most was 70. A total of 131 6th through 8th graders were given a blank food guide pyramid to complete. The majority (74%) of the respondents could name all of the food groups and 36 % knew the correct serving size on the food guide pyramid. They also took a quiz with hot dot pens about vitamins and minerals. Results indicate that 75% of them made an A on the minerals test and 43% of them received an A on the vitamins test. Almost 90% of the participants at the feeding sites knew that chocolate milk has the same ingredients as regular milk. A total of 60% of the students were drinking at least 3 glasses of milk a day and where it comes from.

FUNDING: Funded through regular Extension and TNCEP, a nutrition grant funded through the Department of Human Services.

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TITLE: Cardiovascular Education

Issue: The Extension program in Lauderdale County, Tennessee identified the need to assist at risk people with improving their cardiovascular health through educational programming. Through a partnership between the Health council and Extension a program was implemented targeting high risk people.

WHAT HAS BEEN DONE: A Healthy Heart curriculum was developed by Extension faculty on nutrition and health... reading food labels, grocery shopping, identifying risk factors, low fat sodium sugar menu planning. Twelve training cooking school sessions conducted in six two hours meetings. Three aerobic classes conducted three times a week by the healthy heart program
Three hundred participants enrolled.

IMPACT:

25% of participants self reported doctor taken of high blood pressure medication
Average saving on medication \$25 -\$30 monthly, approx. \$360 annually on one prescription
100% reported through in class check -ups reduce in blood pressure rate, increase in daily activity, mental and physical endurance. All (100%) can identify risk factor associated with heart disease. New and different audience contacted. At 85%increase practices on reading food labels.

FUNDING: Extension

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TITLE: Healthy People ... Healthy Communities

ISSUE: With 28% of the population age 55 years and older, exercise and diet are major concerns in Hardin County. 17.1% of the families in the county are below poverty level and are concerned about family health. The lack of good nutrition and health practices is shown to lead to stroke, cancer, heart disease and diabetes.

WHAT HAS BEEN DONE: 1 program to Head Start parents, 1 program to families, 1 program to 6 FCE clubs, 1 display and 3 news articles on Healthy Cooking; and a series of 2 programs for seniors and 18 news articles on Healthy Lifestyles were conducted. A total of 19 personal contacts and home visits to provide individual assistance was also made.

IMPACT:

- 82.3% of the 17 Head Start parents adopted 3 or more of the recommended practices taught in healthy cooking program to improve nutrition of family meals.
- 90.7% of the 108 FCE members reported adopting two or more of the healthy cooking practices to improve health through diet.
- 100% of the 25 family members gained knowledge on reading food labels and 84% adopted practices of reading labels to reduce fats and sugars in the diet.
- 65% of the 31 seniors at 2 sessions on exercise developed and implemented an exercise program to maintain weight and improve lifestyle.

FUNDING: Supported through regular Extension Funds.

#

TITLE: Healthy Diets ... Healthy Families

ISSUE: In Hardin County 56.9% of the families with children under 6 years have all parents working and 28% of the population is age 55 or older. Due to time constraints, special nutrition needs and lack of knowledge in nutrition, dietary intake of these families tend to be inadequate.

WHAT HAS BEEN DONE: A series of 3 programs, 5 special interest, 1 display and 5 news articles on Food Guide Pyramid; 4 workshops, 1 program, and 1 special interest on Menu Planning and Preparation Methods; and 2 special interest, 1 display and 4 news articles on Dietary Guidelines were conducted. Personal contacts and visits were provided to 35 individuals.

IMPACT:

- Of the 48 individuals attending the series on Food Pyramid, 77.7% increased vitamin A, 88.8% increased vitamin C, 66.7% increased calcium and 77.7% increased fruit and vegetable intake to recommended levels.
- 68.8% of 16 culturally diverse limited resource families attending special interest on Food Pyramid reduced fats in family meals.
- 89.5% of 19 individuals attending menu planning workshop adopted practices taught and saved an average of \$12.94 weekly or approximately \$11,400 annually on their family food budget.
- 93.3% of 15 limited resource individuals attending special interest meeting on Dietary Guidelines gained knowledge to improve health and nutrition.
- 83.3% of the 17 limited resource individuals attending nutritious snack workshop are preparing the snacks for their families.

FUNDING: Supported through regular U.T. Extension Funds. Food supplies used in snack workshop were donated by local supermarket.

#

TITLE: Health and Safety

ISSUE: The health and safety of the people of Chester County is of extreme importance. The Southern Poison Control Center reported that over 2 million poison exposures occur yearly with 18,000 resulting in death. The USDA reported that 9,000 Americans die each year, and millions more are sickened, as the result of a food-related illness. The NCHS, Centers for Disease Control and Prevention reported that one-third of decedents resulted from cancer. Tennessee's cancer death rate exceeds the national rate by 2.8 percent in females and 28.9 percent in males.

WHAT HAS BEEN DONE:

- π Presented Poison Control Education program to seven FCE clubs.
- Conducted hand-washing safety program with students grades 4-8 at 4-H November club meetings.
- Designed and delivered three grocery bag stuffers focusing on food safety to three local grocery stores.

IMPACTS:

75 percent of FCE members reported by show of hands that they were able to identify potential poisons in the home.
80 percent of students gained knowledge of proper hand-washing and plan to adopt good hand-washing skills.

Additional Comments from participants and/or collaborators:

Grocery store manager commented, “Thank you for these. Our customers really like them. Please continue to write them.”

FUNDING: Funding of the Health and Safety program in Chester County is supported mainly by two entities: TNCEP and FCE County Council. Local agencies contributing to the funding include: Chetser County Health Department, Department of Human Services, Southwest Tennessee Human Resources, Chester County Adult Learning Center, Chester County Public Library, Chester County School System, Chester County Independent, and Chester County Senior Center.

#

TITLE: Youth Health and Safety

ISSUE: According to the CDC, thirteen percent of American children and adolescents are overweight or obese. And according to the Children’s Hospital of Pittsburgh, unintentional injury is the leading cause of death among children ages 14 and under. Both of these statements affect children across the nation, but they can both be avoided or prevented. Lives can be saved in Maury County if we make children aware of potential hazards that surround them and instill healthful eating habits in them at an early age.

WHAT HAS BEEN DONE: One Bicycle Rodeo was conducted teaching 4-H’ers in grades 4 through 8 the importance of Bicycle Safety. This provided them the opportunity to practice their new skills learned while competing in different obstacle courses.

A Cooking School was conducted for traditional 4-H’ers and students at King’s Daughters School (mentally and physically handicapped children) to learn the role of the Food Guide Pyramid in their lives and gain new cooking skills and techniques. It was a four day school lasting three hours each day.

Four dairy related programs were presented at three local libraries (180 children) and one program at the Life Care Center (50 adults) in honor of June Dairy Month giving participants the opportunity to taste test new dairy products. An Interview was conducted at a local radio station along with two JDM spots to be aired on three local radio stations throughout the month of June. A Milk Mustache board was displayed at Shady Brook Mall during 4-H Day at the Mall featuring Maury County celebrities with a milk mustache and a quote about milk.

Eight volunteer leaders (adults and teens) were trained on safety and health issues to prepare them to be leaders at Junior 4-H Camp.

A Food and Kitchen Safety program was presented to more than 2,000 students in Maury County using the Fight BAC curriculum.

A Firearms Safety program was presented to more than 2,000 students during the 4-H club meeting to make them aware of potential hazards with firearms.

A 4-H Bread Baking Contest was promoted to all 4-H Club members (more than 2,000) to provide an opportunity for them to practice the Food and Kitchen Safety techniques they learned the previous month. A healthy recipe option was also promoted for children to bake.

Impact: Out of 12 participants in the Bicycle Rodeo, 11 gained knowledge of bicycle safety and 12 said they learned how a helmet should properly fit the head. 11 of those said they planned to wear their helmets more in the future.

When asked what three things each child learned as a result of the 4-H Cooking School, the most popular answers given by the 11 participants were learning the importance of hand washing, proper etiquette, and how to make new foods.

During the month of November, nearly 500 students participated in the bread baking contest showing knowledge used and skills practiced. They prepared items from recipes and some made healthy recipes by using reduced fat milk, whole wheat flour, and/or a reduced amount of oil in their recipe.

FUNDING: Regular Extension Funds

#

TITLE: Health Works

ISSUE: According to the Warren County Community Health Council Needs Assessment the top three problems facing the Warren County community are teen alcohol/drug abuse, teen pregnancy and smoking. Warren County teacher surveys also indicate the increased need for more information relating to health/wellness due to lack of classroom time devoted to this subject. With a teen pregnancy rate of 49.8% , well above the state average, the State of Tennessee has mandated each county to focus on pregnancy prevention.

WHAT HAS BEEN DONE: Utilizing the Health Works curriculum, a five part series of educational programs was taught to 2277 youth in the area of health education. Topics covered included: Consequences of Smoking (Pig Lungs), smokeless tobacco, food guide pyramid, and sports nutrition. In addition, a survey was administered to all 6th-8th grade students regarding tobacco usage and frequency. An anti-tobacco advertising poster was also conducted with monetary awards provided for the winners. Promotional fliers were also distributed to all 4th-6th grade females regarding a four-part Girl Talk series. The educational program for mothers and daughters focused on adolescent development, improving self-esteem and communication skills. Networking with the TNCEP coordinator, a summer day camp in the area of nutrition education was conducted at the McMinnville Housing Authority for youth at risk. Topics covered included food from around the world with youth rotating to five stations.

IMPACT: Tobacco survey results indicated the following:

GRADE	# OF STUDENTS	% TRIED TOBACCO
8th	229	40%
7th	230	20%
6th	233	20%

Of the of 8th grade students who responded, 10.5% are regular users of tobacco products with the 7th and 6th grade percent at 2%. 65% of those who had tried a cigarette or smokeless tobacco replied that the 4-H Science Smoking Lungs presentation had changed their mind about tobacco use. 767 Middle School students utilized their knowledge of tobacco advertisements to make anti-tobacco posters. 2277 youth gained knowledge relating to health education topics covered. 40 mothers and daughters completed the Girl Talk sessions with 95% reporting increased communication skills.

FUNDING SOURCES: Supported through regular extension funds

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TITLE: FOOD/NUTRITION/HEALTH

ISSUE: Heart disease is one of the problems associated with poor diet and lack of exercise and can occur at any socio-economic level. The National Heart, Blood and Lung Institute backs up this statement by saying that heart disease is the number one cause of death in the United States, outnumbering deaths from cancer and accidents combined. According to the American Heart Association, including regular physical activity helps reduce your risk of having a heart attack and stroke. In addition, there are certain factors that may increase a person's risk such as being a woman over the age of 55 or a man over the age of 45; high cholesterol; high blood pressure; being overweight by 20 pounds or more; and getting less than 30 total minutes of physical activity on most days. (American Heart Association). A healthy diet can decrease the chances of having a heart attack, according to the National Dairy Council, by reducing fat and getting more of the essential nutrients for the body to function. This can be accomplished by eating according to the Food Guide Pyramid. The American Medical Women's Association has shown that a healthy low fat alternative in the diet is soy products rather than too many red meats.

WHAT HAS BEEN DONE: Extension agent completed a three-month series with approximately 100 persons (the majority were middle age & older men and women) entitled "The Healthy Heart Series". The first of the series focused on the American Heart Associations new recommendations for a healthy heart including eating healthy from the food guide pyramid,

maintaining a healthy weight, getting regular exercise, lowering blood pressure and lowering blood cholesterol. The second portion of the series focused on the Healthy Heart Benefits of Walking/Exercise. The final portion of the series was entitled the Healthy Heart Benefits of Soy in which participants were shown the nutritional value of substituting soy in the place of ground beef for heart patients or anyone trying to lower their blood pressure or cholesterol levels without giving up the taste of beef. Participants were given the opportunity to taste the soy meat substitute in a one-dish cooking demonstration. Evaluations and final survey were completed by participants.

IMPACT: Survey and evaluation results showed the following. Only thirty percent of those surveyed stated that they already had some type of heart condition, however, 47% (49) stated that they had a family history of heart problems. Because of their participation in the program, participants said the following:

- 44% (38) of participants reported that they were now eating a healthier diet based on the food guide pyramid
- 31% (27) reported they are maintaining a healthy weight through regular exercise such as walking
- 44%(38) stated that they had reduced the amount of sodium in their diet in an effort to lower blood pressure
- 60% (52) reported they had reduced the amount of fat in their diet in order to reduce cholesterol levels
- 43% (37) began a regular walking program as a result of the series of those who reported that they had already been walking prior to the program
- 51% (44) said the program encouraged them to continue walking for the healthy heart benefits.

Overall, participants said they gained knowledge as follows:

- the need to eat from the food guide pyramid to have a healthier heart -64% (56)
- what to do to lower blood pressure- 56% (49)
- what to do to lower blood cholesterol- 55% (48)
- the benefits of walking for good heart health- 63% (55)
- the healthy heart benefits of soy- 70% (74)

Prior to the program series, 29% (30) of participants said taste would have kept them from purchasing a soy meat substitute. After actually tasting the meat substitute, 76% (80) of participants said that taste would now encourage them to purchase the soy meat substitute for its healthy heart benefits. Several participants have informed me that they are now using soy for their family with family members not even being aware of the change and commenting on the good taste. Overall, the program series showed an increase by participants as to knowledge gained in ways to have a healthy heart and lifestyle changes to have a healthier heart.

FUNDING: In addition to regular Extension funding, a portion of the funding came through

Family & Community Education Club funds.

#

TITLE: Diabetic Education, Health and Nutrition

ISSUE: In the United States there are nearly 16 million persons with diabetes, in Tennessee that number is nearly 1 million. Of these about half of all persons with diabetes do not realize that they have the disease. People need information on how to control and manage the disease, as well as how to determine if they indeed do have this condition.

WHAT HAS BEEN DONE: The FCS Extension Agent in Jefferson works with the local Health Council to deliver health information to persons in Jefferson County. During the year 2002 there were 4 workshop conducted by the Extension Agent with attendance of 47 people. In conjunction with these workshops we conducted food preparation demonstrations each time. We covered different foods each time, once we discussed "winter" foods, using soups, breads as our basis. In the spring we discussed the use of fresh vegetables and fruits in the diet. During the summer months we looked at outdoor cooking and family meals. For the fall we emphasis the holiday season, with special foods found during the holiday season. In conjunction with these four workshops we always discussed how to live with diabetes and how to manage the condition. The FCS Agent in Jefferson County also uses the monthly newsletter to get information out to persons about diabetes. We use the local newspaper during November to emphasis diabetes, since November is National Diabetes month. The Extension Service worked with the local health council to deliver 4 diabetic classes at the local college. These classes were primarily for information, and did not include food preparation. Speakers included dietitians, doctors, and drug company representatives.

IMPACT: Forty-seven persons attended the "Cooking/Management" classes in Jefferson County. People are most receptive of the information. The evaluations of these workshops indicate that people are glad to be able to attend workshops where they learn how to prepare food and learn how to manage their disease. Comments taken off the evaluation forms include, "learning about portions sizes, how to read food labels, how and why to stay on schedule, the importance of exercise in keeping glucose under control, how important it is not to skip meals". One child that attended the class put on his evaluation, "I was born with my pancreas not working, it is not my fault". The classes conducted by the health council at the local college was attended by 215 people. Comments from those people included, "it helps to meet other people who have to fight this disease just like I do, everyday, the doctor's were very honest and up front when explaining how to avoid complications, classes like this cost a lot of money to attend, it helps to be able to attend a class and it not cost money".

FUNDING: Extension provides the Extension agents time. The local Extension office provides the facilities and the health council provides money to purchase food to prepare.

#

TITLE: Volunteers and Leadership Combine For Blood Program Successes

ISSUE: Henry County is one of 13 counties in West Tennessee that is covered by the West Tn. Regional Blood Center in the Jackson area. Blood that is donated is housed in the area rural hospitals as well as blood center and Jackson hospitals. To insure an adequate supply of healthy blood is on call for all area residents, it is vital that Henry County recruit and deliver over 1300 donors annually at local blood drives. Statistics are showing that nationwide very few areas of the country are still able to supply their needs for blood with healthy blood donors. This is a local and nationwide issue that concerns the health of all Americans. If only 12 local drives are held each year, 104 pints of blood should be collected on each visit. This blood is currently being used by surgery patients, chemotherapy patients and kidney patients along with accidental reasons. Local citizens must be involved to keep this program going for good health. It can not be expected that the West Tn. Regional Blood Center can generate the kind of donors for Henry County that local Henry Countians could do. Thus a board of directors and local volunteers must be involved to see this effort successful in recruiting new donors, marketing the program, recognizing faithful donors, and soliciting volunteers to work at new donor sites.

WHAT HAS BEEN DONE: This program has existed for several years in the Henry County area. However, with the new federal regulations and many donors getting older, it has become apparent that new donors must be recruited with the help of volunteers. Extension gives leadership to this program by the Extension FCS agent serving as one of the board co-chairs. She helps to identify potential new board members. Extension Service produces cards to be sent by volunteers to potential donors. Extension FCS agent works with a committee to plan the annual Lifeline Blood Recognition banquet. Blood donation nationwide after 9/11/01 is down. More need for healthy blood platelets and plasma are needed as the number of cancer patients rises. Extension believes that this is a community service effort that needs leadership development and marketing strategies that Extension can help teach. It is a marketing and manpower initiative that Extension has long been known for assisting with in our area.

IMPACT: A total of 1195 pints of blood were donated during the previous 12month period of time. However, with the addition 2 new non-regular drives and the site drives at the local high school and factories and businesses, 1484 pints of blood were collected in Henry County. This is slightly above the previous year but down at the monthly drive. The reason that the drives must be spaced out is that blood must be used in 56 days of processing. A banquet committee was appointed and conducted a banquet to recognize over 110 donors. Emphasis was put on the new one gallon donors (8 pints of blood given) and their first time recognition. 6 new volunteers were recruited to work at the sites with paperwork and refreshments. A scheduling chair was trained to assist with the responsibility.

FUNDING: Henry County Government and the Univ. of Tenn. Extension Service funding.

#

TITLE: Environment, Health, and Safety,

ISSUE: Nationally in 1997, Tennessee ranked worse than 42 states in overall teen violent deaths (accidents, homicide, and suicide) as reported in 2000 National Kids Count Data Book. Tennessee's teen violent death rate in 1997 was nearly 35 percent higher than the national average. Through needs assessments of 4-H Adult Leader Group and 4-H Advisory Committee, the direction to be addressed will be according to T-CAP objectives in relation to the Science and Health Standards. The Safety programs will be based on information according to accidents in the Madison County with youth on topics of food safety, electricity, home alone related topics. The objective is to empower youth to develop positive lifelong habits related to safe and healthy lifestyles and activities. Prevention programs that impact youth at an early age appear to be the solution. This would lead to think that the more information that the youth have will eventually get through and they will start to prevent these dangers from harming themselves.

WHAT HAS BEEN DONE:

*Conducted and delivered educational programs on science, health and safety topics to 15 Elementary Schools and 4 middle schools, home schools and community club. There was 6 monthly lessons for the 100+ clubs. The topics ranged from starting up clubs and duties, food safety, chemical and environmental safety, electric safety to home alone safety. Agent taught proper hand-washing techniques, and identified where germs grow with a hands on participation program on food handling and safety techniques; Electric safety worked in cooperation with Southwest Electric Membership Corporation to show a video entitled "Play it Safe with Electricity" for elementary students and a High Voltage Demonstration given to the middle and high school students. For the household chemical safety month- examples of chemicals and a questionnaire was used to identify the chemicals and examples of mistakes made were taught. For home alone-latch key topic a video through the Tennessee Home Economics Association entitled "Don't Talk to Strangers" was shown and handouts on activities for home alone safety was distributed. The last month was used as a evaluation and a jeopardy game was played with all of the years topics, this enabled the students to recall what had been taught and for agent to see if she was effective.

*Agent designed a monthly newsletter with the program assistants to include topics on safety in home, play, bicycle, fire and environment safety. Newsletter was provided to 3500 4-Hers (in school clubs, home schools and community clubs).

*Agent conducted contests (wood craft, arts and crafts, cookie baking, bread baking, stitch and sew, demonstrations in relation to safety issues.

*Agent conducted summer classes on topics of baby-sitting, 1st aid, safety, health, foods and nutrition, holiday crafts and safety and health related topics.

*Agent trained 20 4-Hers and adult leaders for camp training at dry run on topics of safety, 1st aid, procedures and all over welfare of child.

*Agent provided record book workshops for 4-Hers on a variety of topics which included:

health, safety, food and nutrition, personal development, etc.

*Agent trained judging teams on outdoor meat cookery and food and nutrition.

*Assist 4-Hers in demonstrations and exhibits on related topics.

*Distributed project material to 4-Hers which included topics of safety, health and the environment.

*Promoted 4-H through radio, TV, newspaper and 4-H programs to adults and 4-Hers.

*Develop monthly programs and teach to program assistants for the 4-H club meetings.

Designed and developed an exhibit and presentation materials for the 5th grade Environmental Fair in cooperation with the Health Department, where approximately 1200 5th graders will participate. Present 10 minute lessons on recycling to youth participating in Environmental Fair.

*Check safety procedures for the yearly fund-raiser-chicken, slaw, and sanitation.

*Answer questions from phone calls about food safety issues.

IMPACT:

1. 3500 club members gained knowledge on topics related to safety, health, and the environment. In a jeopardy game executed in the last month of the year the 4-Hers answered 80% of the questions from the previous months topics on safety, health, environment and 4-H.
2. At a club meeting this past month, I asked each class that had 4-H last year in the 5th -12 th grade if they remembered what we discussed last year and they responded positively every time. They could remember each topic for the month. Several told me stories that I had told them about each topic- this had been a year ago and I was impressed they remembered what I had taught them, considering we are not in their room more than 10 hours for the year. Some of their comments were" I remember you told us not to put household chemical in a coke bottle because someone could accidentally drink it", I remember you told a story about 3 boys who were bored and they dared one of them to climb an electrical tower and he did and was electrocuted", another recalled the story about when I had accidentally used pinesol instead of listerine for mouthwash-because I was not paying attention". Sometimes you think they don't get it or remember, apparently some of it stays with them.
3. Leaders at 4-H camp 100% of the time responded correctly to an emergency, we only had 1 child that had to go to the emergency room and the leaders with her immediately took her to the nurses station. All 4-Hers had their medical forms for 4-H camp and their picture with the medicine.
4. 45 4-Hers attended classes in babysitting, safety, 1st aid, manners, Christmas crafts, food and nutrition, and outdoor meat cookery. Babysitters correctly showed how to change diapers, and what to do in an emergency by either calling 911 1st, getting out of the house in a fire, or calling parents next when appropriate. 4-Hers demonstrated their knowledge of safety when sewing and in arts and crafts- using scissors, sewing machine, iron, hand-sewing and glue guns.
5. 1200 4-Hers received information about recycling, environment and health of mankind by watching a video about recycling and making a boomerang from recycled styro-foam plates.
6. Recordbooks were submitted on topics of Conservation, Wildlife, Health, Personal Development, Meat Science, Bicycle, Electric, and Home Environment for district and state competition. 2 were state winners on these topics and 4 won on Jr. High level at district.

7. Because of our close alignment with the Terra Nova Standards and the Board of Education-we are valued as resource people to help strengthen the school objectives. I have been elected as the President of the Technology Preparation Advisory Board Committee with Educational members and members in the Business area. This allows for 4-H to give a report each quarter to key people who help us educate the students in Madison County.
8. For our annual fund-raiser the BBQ Chicken Shack at the WTSFair we have to pass the health department inspection for sanitation, fire extinguishers, and cleanliness and we have never been turned down and no incidences of food poisoning. I order all of the food and provide the slaw each day, as well as keep the refrigeration system and hand-washing system current.
9. The contests for the year include 12 different contests the participation in each: Christmas ornament-575 Holiday Decoration -562, Wood Craft- 375, Public Speaking- 917, Poster Contest-852, Stitch and Sew- 353, Photography- 614, Cookie Contest-318, Decorated Supershirt-408, Breadbaking-225, Dairy Poster- 596, Demonstrations- 1004; these contests involved several skills and many used safety skills for instance with cooking, crafts, painting and even the demonstrations used safety in some areas.
10. 4-Hers submitted 680 record books on topics of 4-H explorer-safety, health, environment, wildlife, cooking, etc.

FUNDING: University of Tennessee Extension Service, Madison County 4-H Club, Madison County Volunteer Leaders Organization.

#

TITLE: Breathe Easier--Using Tobacco Products

ISSUE: The Overton County Community Health Assessment Survey shows smoking as a health problem facing the community. The American Cancer Society figures lung cancer to be the second leading cause of death in the county, preceded only by heart disease. The Oncology Coordinator for the Sara Cannon Cancer Center in Livingston sited tobacco use as a contributing factor to these figures. The Overton County Health Assessment stated that there is a marked increase in the use of tobacco among the youth in the county essentially the teens 13 to 15 years old. The per-capital income in Overton County in 2000 was \$17,820. In 2000 14.4% of the population received food stamps. In Overton County 48 percent of the students receive free or reduced lunch. Yet, many more families in the county waste their money on tobacco products or cigarette's.

WHAT HAS BEEN DONE: Demonstrations on the effects of tobacco product use are given to each 4-H club member (63 clubs, approximately 1500 club members) according to grade. A display showing the effects of tobacco use on the mouth and lungs is displayed at both high school health fairs (400 students) and at the county health fair (350 individuals). Two radio programs about the health effects of tobacco products were used and four article's in the local newspapers were developed.

IMPACT: A follow-up evaluation by the Community Health Nurse at Livingston Regional

Hospital indicates:

--81% of all high school students surveyed who smoke, dip or chew, would not have started if they had seen the demonstrations and displays before becoming addicted.

--89% of these same students would like to quit after seeing the display and talks.

--98% of the students viewing the demonstration and displays who do not presently use tobacco products stated they never would try them.

FUNDING: The agents demonstrations materials were paid from county and state funds secured through the Overton County government and the University of Tennessee Extension Service. Additional funds were secured through grants provided by the Alexander education fund, hand outs and posters were secured through the American Cancer Society and the American Heart Association in conjunction with the local Health Council.

#

TITLE: Healthy People in Healthy Communities

ISSUE: EPA studies indicate that indoor air levels of many pollutants occasionally are more than 100 times, higher than outdoor levels. The National Center for Chronic Disease Prevention and Health Promotion said that nearly half of young people aged 12-21 years do not regularly engage in vigorous physical activity, and participation in physical activity declines strikingly as children age. The National Center for Chronic Disease Prevention and Health Promotion said that among 5-24 year olds, motor vehicles, homicide, suicide, and other injuries account for nearly 3/4 of all mortality and social problems.

WHAT HAS BEEN DONE: Conducted stress management programs for FCE Clubs, GED classes, and WIA classes. Six Leader Lessons on environmental issues that impact health were developed for PA's to use in home visits. A recycling activity done in collaboration with the Solid Waste Department was conducted with 318 Fourth grade students. A health series done with after school children on poison prevention, fire safety, and physical activity was conducted at the Montgomery Community Center during Jan. - May. News articles for the paper include; 4 on environmental, 5 on Poison Control, and 15 on Health related topics. 45 news articles have been done so far this year. A 3 part series was done at the Senior Citizen center. Topics included Poison Control, Medication & Safety, and Housekeeping Tips. A walking track at Montgomery was planned for 3 days a week in June and July. A display was put up along with handouts and videos. Three people took advantage of the track. Lack of participation forced us to make other plans. Display was moved to the Senior Center so more people could see the Health display and the public could be aware of what Extension is doing. A TNCEP activity was done with Fun, Food, and Reading in 7 locations around the county. Ag in the Classroom was offered to the county schools for all k - 1st grade teachers. Children learn where food comes from and what foods are good for us. Healthy Choices Program done for FCE and others in the community. Eggstravaganza - Activity was geared to the Head Start parents and parents in the Housing Projects. A Safety Day was planned for Day Care Children and Head Start. Children were involved in activities that taught the importance of fire, bicycle, food, and other

types of safety issues. Girl Talk /Straight Talk classes were promoted and conducted. Letters were sent out to the Minority churches to encourage more participation and to train more teachers. As a result 2 minority churches held a class at their congregation. A Baby Think It Over Doll program is being planned with the counselors. A preliminary meeting with Counselors and Superintendents has been done and approval has been given. We hope to start it soon. A Health Series was done at one High School. Working in collaboration with FCS teacher and the health department , teenagers studied about better decision making in regards to sexual activity, smoking, and better Health.

IMPACT:

- * 17 participants in stress management class will practice one activity to reduce stress.
- * 68% of home visit clients will adopt a healthier lifestyle.
- * 43% of 4th grade students participating in recycling activity learned one way to recycle.
- * 49% of 4th grade students participating in recycling activity will recycle more.
- * 84% of 5th grade students participating in Farm Fest learned a new way to be safe around poisons.
- * 10 youth participating in after school program learned the poison control number.
- * 12 youth participating in after school program learned that physical activity is good for their health.
- * Approx. 3511 people saw health displays located at 9 different sites around the county.
- * 67% of children participating in Ag in the Classroom made healthier food choices.
- * 45% of children participating in a Safety Day learned what to do in case of fire.
- * 83% of students participating in a Health Series at High School were more motivated to make lifestyle changes to keep their body healthy.

FUNDING: Regular Extension Funds, TSU Program Enhancement Grant, and CPI Grant.

#

TITLE: Healthy People...Healthy Communities Promoting the Health Benefits of Walking

ISSUE: National statistics indicate an increase in adults and youth who are overweight and engaging in less physical activity while increasing caloric intake. Physical education teachers in Fentress County expressed concern for the increasing number of youth who are overweight. A 1993 Health Assessment in Fentress County indicated a high level of stress, high blood pressure, diabetes and heart disease among the adult population surveyed. A sedentary lifestyle contributes to these health problems.

WHAT HAS BEEN DONE: Fentress County UT Agricultural Extension Service staff presented the Walk Across Tennessee Program to the members of the Fentress County Health Council. The council approved the support of the initiative and formed a subcommittee to network with Extension to plan, implement and evaluate the program. The committee met four times. There were six radio spots and five Country Living articles to inform the public about the

health benefits of walking and to promote the initiative. All PE teachers were visited and encouraged to involve the youth in the initiative at the schools. The benefits of walking was included in the FCE newsletter as well as being a leader lesson during the FCE Club meetings.

The team

captains took part in promoting the initiative during the opening ceremony of the local high school football game. Flyers, banners and letters to all area churches and businesses were distributed to encourage participation.

IMPACT: 15 adults served as team captains and organized 15 teams of 152 adults in Fentress County to take part in the initiative. The teams represented area banks and businesses, churches, Fentress County Health Department, the hospital, UT Extension Service, FCE members, radio station, and groups of friends

525 Pine Haven Elementary students took part in Walk Across Tennessee

152 adults logged 12,600 mile in eight weeks

525 youth logged over 3,000 miles by walking for Walk Across Tennessee during a designated portion of their PE time

24% of the adult walkers or 37 indicated not doing any fitness activity before beginning Walk Across Tennessee and did not indicate any days walking during the week

12 teams logged over 500 miles each

The top five teams logged over 900 miles each

Wrap up comments included: Total weight loss of 68 pounds , "It kept us exercising more than we would have," "I liked the group to report to and get encouragement from," "I have more energy and am firmed up in legs and thighs," "Helped me to exercise more since I had my by-pass surgery," "I liked that my co-workers were also walking," "It motivated me to increase the miles I walk," "I liked the competition." "My students enjoyed the friendly competition and I incorporated the initiative in my teaching plan." The Fentress County Health Council, team captains and PE teacher requested that the initiative be repeated in the Spring of 2003 with the goal to involve more area businesses and schools

FUNDING: University of Tennessee Agricultural Extension Service and community support from Burnett Poultry and the Fentress County Regional Medical Center

#

TITLE: Community -Based Health Initiatives

ISSUE: Anderson County continues to be a pilot county for the University of TN Center for

Community-Based Health Initiatives. This program is a partnership between the Agricultural Extension Service and the College of Pharmacy. The focus areas include promotion of the flu and pneumonia vaccines and poison prevention. The target audiences for vaccines will be high risk individuals such as persons over age 50 and diabetics. Parents of young children will be the targeted audience for poison prevention. Many people do not know there is a Poison Control Center for Tennessee. As a result they call 911 or take the person to the emergency room. A woman's risk of developing breast cancer increases as she gets older. Over 3/4 of breast cancers diagnosed each year occur in women over age 50. Early diagnosis is the key to survival. Tennessee ranks second in the nation with persons diagnosed with diabetes.

WHAT HAS BEEN DONE: Expanded health education program efforts to help Extension become more involved with health issues. In addition to working as a partner with a pharmacist, an Anderson County Extension Health Advisory Committee representing ten different groups was established. The committee is representative of key health organizations, income levels, racial population, gender and geographic areas. A survey was used by the committee to rank the "Top Five" areas for health education programming in Anderson County.

Examples of programs conducted (numbers of participants are indicated in parenthesis):

1. Flu and Pneumonia Shots- FCE Achievement Day (51), FCE Health Leader's Training (13), Oak Ridge Senior Citizens Center (18), Scarboro Community Center in minority neighborhood (21), Housing & Social Services Providers (19), Early Headstart and Headstart Parents & Staff (43), Wellness Center - Diabetic patients (40), Display at Community Action office and Courthouse.
2. Poison Control Center, Poison prevention and Childhood lead Poisoning- Headstart Parents (23), Children's Advocacy Network Board members (16), America's Promise Board members (20), Healthy Start Staff Training (4), and display at Courthouse and Headstart office.
3. Breast Cancer- Clinton Health Fair for Senior Citizens (138), Oak Ridge Health Fair for Senior Citizens (375), Display for Senior Citizens Program at County Fair, FCE Health Leader's Training.
4. Diabetes- FCE Rally Day Program (62), Housing and Social Services Providers (19), County Fair Senior Citizens Day Program (442), Diabetes Fair at Oak Ridge (200), FCE Health Leader's Training.

IMPACT: The following results were reported: --Based on random survey of program participants and FCE members, a total of 155 persons have had a flu shot and 16 persons over age 65 years had a pneumonia shot.

--100% of Headstart parents memorized the new Poison Control Center number and plan to use number labels on telephones, 100% gave an example of one thing they planned to do to make their homes poison safe.

--14 FCE members reported the following behaviors before and after breast program

- *talked to doctor about risk - 22% increase
- *mammogram - 35% increase
- *clinical breast exam - 29% increase
- *monthly breast self-exam - 36% increase

--15 FCE health programs were conducted by FCE leaders. 17 FCE members reported that they had improved food preparation methods for diabetic family members and became more aware of special needs of diabetics.

FUNDING: Regular Extension

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TITLE: Healthy People.....Healthy Communities

ISSUE: The TSU Gardening and Food Preservation Program was design to meet the needs of the Family Life Clientele as well as the general public we serve. This program provides the clients the opportunity to receive educational and nutritional information on warm and cool seasonal crops, and to teach the clients ways they could save valuable dollars on fruits and vegetables.

WHAT HAS BEEN DONE: Agent network with the Small Fruit and Gardening Specialist at Tennessee State University to conduct a gardening meeting in the county. Fliers and news articles were distributed in the community to market the program as well as the University. The Agent along with the Program Assistants conducted home visits. Subject matters that were targeted: current gardening practices and trends, economic value, and gardening management. This year there were 51 gardening participants. This year's produce included: purple hull peas, okra, green beans, tomatoes, hot peppers, watermelon, cucumbers, mustard/turnip greens, bell peppers, lettuce, banana peppers, squash, carrots, beets, grapes, corn, dill, sweet potatoes, cabbage, popcorn, peanuts, jalapeno peppers, butter beans, egg plants, zucchini, cantaloupe, and onions. Of those gardeners that participated there were awards given, they were: the "Best Variety", "Best Well Kept", and the oldest "Gardener Award" (which was the tender age of 93 years old). The Family Life Program Assistants reached a total of 160 families here in the county. Certificates were given to those that participated. A collaborative effort was made utilizing the TSU Staff, Area Specialist, and the Family Life Clientele.

IMPACT: Participates were able to take away valuable educational and nutritional information. Hands on techniques were utilized, over \$3,000.00 dollars were save, which stretched the food dollars of the house hold. Attitudes and behaviors were changed as a result of this program.

FUNDING: Efforts supported through regular Extension funding

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TITLE: Healthy People/ Healthy Communities 2010

ISSUE: The five leading causes of death in Tennessee in 1998 were heart disease, cancer, stroke, unintentional injury and chronic obstructive pulmonary disease. Approximately 6% of adult Tennesseans reported having been told by a Health professional that they have Diabetes up from 4 % in 1997. Non white females had the highest reported prevalence of Diabetes at 8 percent. Type 2 Diabetes has been identified by the Bradley County Health Department as a growing problem. Tennessee ranks second in the nation with persons with Type 2 Diabetes. In Tennessee 9.1 percent of adults ages 45-64 have Diabetes- the highest in the United States.

WHAT HAS BEEN DONE:

Three 3-week Right Bite Diabetes Cooking Schools were taught by a partnership of UTAES FCS agent, TNCEP program assistant, Bradley County Health Department and Bradley Memorial health professionals.

A series of programs on Get The Flu Shot not the Flu was also conducted for this audience and for other audiences in the community.

The FCS agent completed data and applied and received two educational health grants for Diabetes education from the Tennessee Department of Health (\$5000 and \$8300).

The grant provided for the installation of a \$4000 educational sign installed at the Bradley County Health Department through a partnership of UTAES Diabetes grant, Duracell Company donation and Bradley County Government funding.

The grant provided for the establishment of a lending library of Diabetes educational materials and is located at the UTAES-Bradley County office.

Additional kitchen equipment was purchased with the grant and is housed at the Health Department.

Nine educational displays on Diabetes, Get the Flu Shot not the Flu and Walk Across Tennessee were developed and displayed at various locations in the county throughout the year.

Walk Across Tennessee programs were conducted to more than 500 in the community as a component to the Diabetes program.

Marketing of the programs included group meetings, numerous newsletters including the FCS, YMCA, church and civic newsletters.

Other media coverage included radio and newspaper coverage with feature photographs.

FCS agent also served as member of the Bradley County Health Council and Family Resource

Agency Health Focus group.

IMPACT:

A total of 37 (23 Diabetics and 14 caregivers) participated in one of three three-week cooking schools held at the Bradley County Health Department.

The receipt of the State of Tennessee educational grant provided for the purchase of an educational sign installed at the Bradley County Health Department, establishment of Diabetes lending library, purchase of additional kitchen equipment, printing for Diabetes instructional manuals and Walk Across Tennessee materials.

Sixty-one adults completed the two month walking program and walked a minimum of eight weeks, kept a diary of miles walked and completed evaluation data. In addition four elementary teachers and 67 students kept a diary of their miles walked in the eight week period. Bradley County individuals enrolled in the program walked a total of 7782 miles (128 walkers). The top eight recorded amounts walked at 644 miles, 522 miles, 352, 349, 285, 271, 249 and 205 miles. All walkers received a Walk Across Tennessee certificate and bag of health care products from Schering Plough.

Sixty-one individuals (53 male, 75 Female including three DHS Families First students) enrolled and completed the walking program and indicated one or more of the following indicators:

- * Got me exercising for the first time.
- * Increased the amount of exercise I was already doing.
- * Helped me find a group to walk with.
- * Kept me going when I felt like quitting.
- * Increased my stamina and energy.
- * Helped me feel less stressed.
- * Increased the time I spent with my family.
- * Helped me maintain my blood sugar level.

The diabetes cooking school evaluation data indicated that the majority of students (95%) had learned to eat smaller portions and use artificial sweeteners more effectively. Ninety percent eat a better variety of foods, read food labels, count carbohydrates and include more green and yellow vegetables in their diet. Students also indicated that they had learned to cook with less fat and salt and to eat smaller portions. They also indicated that they often shared information and tips learned in the class with others (75%).

The flu shot program indicated that 70 % of students who participated in the flu educational program received the flu shot.

FUNDING: These programs were funded by regular Extension funds, Grants received from the Tennessee Department of Health, and private donations.

GOAL 4: Greater harmony between agriculture and the environment.

Overview

Major program/research areas reported under Goal 4 this year include: land use/soil erosion, water quality, pesticide application, natural resource management, forest resource management, and wildlife management. The following describes the projects and programs conducted by the UT Agricultural Experiment Station, the UT Agricultural Extension Service and the TSU Cooperative Extension Program in addressing these areas. More specific information related what was done and what impacts were achieved in each area is included under the Key Theme section.

Land Use/Soil Erosion:

Forest landowners have been losing \$20.00 per acre per year due to a lack of sophistication in managing and marketing timber. Water quality has been at risk of impairment, due to inadequate attention to erosion prevention during the logging process. Extension hosted a site for the regional satellite program - Master Tree Farmer II; it featured advanced information on forest and wildlife management. Protecting water quality and soil integrity were also featured. Timber marketing was one main topic. Extension provided a timber marketing field day, and a multi-county forestry, and wildlife management field day.

Demonstration/research plots of native warm season grasses were established and maintained on 4 UTIA Experiment Stations to develop sound establishment and management techniques. In addition, buffer strips were established around fields and along creeks on demonstration farms in an effort to improve wildlife habitat and control erosion and sedimentation. Control farms were identified for comparison purposes. Ten seminars and workshops (attended by 300 people) have been given to adult and professional groups.

A computer-based soil erosion prediction model (RULSE) has been developed under a cooperative agreement between USDA-ARS and the University of Tennessee, and USDA-NRCS. The RULSE model is an improvement on the Universal Soil Loss Equation (ULSE), which has been used for such estimates for almost 40 years. RULSE brings soil erosion prediction technology up-to-date.

Reducing the negative impacts of crop production on the environment, including water quality, wildlife habitat and soil quality, is an important concern when seeking to enhance the sustainability of American agriculture. Extension programs were conducted this year emphasizing residue management, buffer strips and the training of Certified Crop Advisors. Presentations were made at one county meeting, one association meeting and one field day this year, reaching an audience of 300 people. Three in-service training sessions were conducted for extension agents, reaching 70 agents with training in residue management, buffer strips and conservation programs. Three training update sessions for Certified Crop Advisors were also

conducted, reaching 100 advisors, largely from agribusiness. A training session for CCA exam preparation for 30 potential advisors was conducted.

Cotton producers have experienced losses in lint yield and quality or large increases in production costs related to obtaining control of glyphosate-resistant horseweed. Some producers are considering returning to conventional tillage to achieve control of horseweed. This would undoubtedly increase soil erosion on many of these soils. Through UT's research and education program, growers have implemented control strategies to manage glyphosate-resistant horseweed. The results have been an overall better weed management program that will abate the development of other resistant weeds with little increase in cost of production. Management will also conserve soil and water through continuation of no-tillage production systems.

Numerous 4-H youth development programs were also developed to address the concerns of water quality and conservation. Agents conducted club meetings with environmental education themes and promoted related environmental opportunities for outside school participation. In Bradley County, a Conservation Club was organized and meetings were held monthly from February until May. Cumberland County instituted a water conservation program with students in the 6th grade and participated in the Re-Leaf Tennessee project. Volunteer leaders completed special training in natural resources education.

Water Quality:

An interdisciplinary water quality team of state, area and county faculty has been formed to give leadership to educational programming addressing this priority. The team works in close collaboration with the animal waste management priority. Educational programming includes:

1. Developing and delivering information on the environmental provisions of the new Farm Bill to farm families in 28 local meetings.
2. Providing in-depth training on the Farm Bill to county faculty in four two-day training programs to equip them to assist their clientele in effectively using environmental programs in the legislation.
3. Organizing and conducting a field trip in the Conasauga watershed for EPA personnel working with the ag sector to increase their awareness and understanding of rural water quality issues as they develop and implement federal regulations.
4. Developing a Comprehensive Nutrient Management Plan (CNMP) for a family size dairy and conducting a field day at the dairy to educate producers and others about the CNMP process. As far as we can determine, this is the first complete CNMP meeting all federal standards developed for a dairy in the USA.
5. Planning and conducting three 4-H agent water quality training programs in collaboration with Tennessee's Project WET.

6. Assisting to develop conservation buffers at the Milan Experiment Station and adding a buffer tour to the Milan No-Till Field Day in collaboration with the Station Superintendent, NRCS and TWRA.
7. Conducting the aquatics challenge for ten regional Envirothons and the state Envirothon as well as assisting with the comprehensive question at the state competition.
8. Participating in the development of the Southern Region Water Quality Planning Committee (SRWQPC) website which includes information on key water quality issues as well as regional and state programs.
9. Tennessee's share of of the Southern Region Watershed Resource Management grant obtained through the SRWQPC helped support the following educational activities:
 - a. The CNMP element writers certification workshop
 - b. The CNMP Field Day
 - c. The nine county Hay Day in West Tennessee
 - d. The middle Tennessee forestry/water quality field day
 - e. The Weakley County Youth Water Quality Day
 - f. The East Tennessee Agriculture and Community Expo
 - g. Water quality education at the Ridley and Austin 4-H Centers

Based upon the science curriculum needs of teachers and Tennessee's Science guidelines, the Environmental Education Program at the Ridley 4-H Center continues to provide hands-on experiential learning activities for students in K-6th grades. The environmental education program includes projects and educational programs related to agriculture, entomology, forestry, water and soil quality, and wildlife. More than 2,000 students, teachers and volunteers participated in this program during 2002.

Integrated Pest Management:

According to the University of Tennessee research, the primary limiting factors to the approximate 113,869 acres of cotton in the six county area are soil fertility, insects, disease and weeds. When these economic limiting factors or pests reach an economic damaging level, they must be controlled in an efficient manner for cotton producers to maintain the highest economic return for their crop. An educational booklet and slide data have been used this year in the six county area, concerning insects, weeds, disease, soil fertility and other related IPM materials which concern plant and pest management programs in Dyer, Obion, Lake, Lauderdale, Weakley and Gibson counties. Weekly in-field training sessions and farm visits were used to educate producers, scouts and other private enterprise concerning the objectives of IPM programs so that yields could be maintained and/or increased in Dyer and Lauderdale counties where county IPM programs still function. Also, one family farmer in Dyer County outside of the county IPM program was worked with individually and taught IPM principles through in-field training sessions regarding some 1100 acres of cotton. One family farmer in Gibson County was worked with individually and taught IPM principles through in-field training sessions regarding some

400 acres of cotton. Lake, Gibson, Obion and Weakley counties cotton IPM programs have become privatized to the extent that most field and other types of educational correspondence is done on an as needed basis or by phone. Three (3) Western District scouting schools were made available for the six county area. Also, 2,508 Western District IPM newsletters were utilized in Dyer, Lake, Lauderdale and Gibson counties and made available to Obion and Weakley counties to keep producers informed regarding current plant and pest management problems and how to solve them efficiently and effectively. One hundred (100) news articles were used to show producers the benefits of following recommended IPM practices.

Pesticide Application:

In 2002 specialists trained 160 DOT employees @ \$300/person times 160 employees equals to 48000 dollars in savings to Tennessee Department of Transportation. In addition, each received six recertification points. In 2002 a hands-on training was also provided on the TSU Cheatham County Farm for Vegetation Management Applicators. Approximately 65 people attended this training. Applicators from TDOT, Nashville Gas, Nashville Electric, Chemical Companies and County Agents were trained again on environmentally safe management practices at a cost saving of \$150 per person, which equates to ten thousand dollars total. In addition, each person received six re-certification points.

Pesticide safety education programs were delivered to by TSU specialists to maintenance employees of the Metropolitan Nashville Airport which resulted in a new vegetation management program for the airport. The program was designed to manage the more than 2500 acres of runways and grasslands around the airport.

Natural Resource Management:

The University of Tennessee was selected by the United States Department of Agriculture Cooperative State Research, Education, and Extension Service to develop the National Web-Based Learning Center for Nonfederal Forest and Range Lands. The Center will provide a centrally managed and organized Internet resource for nonfederal landowners, managers, and other interested persons to access accurate information concerning the management of natural resources such as wildlife, forest, and range resources. This Internet resource was needed to organize and fill-in existing web-based resources. Internet access to natural resource management information by landowners and managers will allow this Extension program to present information in a cost-effective manner to a large, nationwide audience.

Natural Resources and the Environment is a Tennessee 4-H Priority Program. Opportunities for youth and adults to explore their environment, examine the interconnectedness of human and natural resources, develop outdoor classrooms, apply the knowledge they have gained, improve the environment and address environmental issues have been provided. Educational efforts include school year programs at 4-H Centers, camps and conferences, outdoor learning laboratories, judging teams, service learning projects and classroom programs. Inservice training in water quality issues for youth was held in 2 districts. Results from the water quality training

show that all areas of the training were rated 4.1 or above on a 5 point scale with an average score of 4.4 in terms of usefulness of the information presented for all grade levels as well as knowledge gained, quality of presentation and content. Project WET was also conducted in the Smoky Mountain District with an average training score of 4.78 in the areas mentioned above. In addition, an outdoor classroom inservice was held for the elementary and middle school teachers in Sequatchie County prior to the beginning of school. Follow-up surveys from the outdoor classroom inservice show that each grade level at the school has adopted an outdoor classroom project to implement in their school during the current school year.

In 2002, 4094 youth participated in school year environmental education programs at the W. P. Ridley, Clyde York, Clyde Austin, and Buford Ellington 4-H Centers. Evaluations from the environmental programs show that as a result of participation, teachers and students reduced, reused and recycled; planted trees, shrubs, flowers and gardens; enhanced wildlife habitat, incorporated educational activities into classroom curriculum; and presented community programs. Comments from participating teachers illustrate the impact of the programming emphasis:

...the students has many learning opportunities and got to participate in a variety of activities.

I was able to observe students learning and cooperating where we had never seen it before.

Instructors were wonderful. I appreciate the positive influence in the character of our children.

Nearly 6,000 youth in grades 4-6 participated in Junior 4-H Camp which featured an International Wonders curriculum. The theme focused on participants becoming aware of differences and similarities among the Earth's people, experiencing new foods and customs and exploring common bonds. Understanding and an appreciation for worldwide resources is a vital component of the curriculum. Evaluations show that more than 80% of the participants rated the educational project sessions and special programs as excellent or good.

A summer camp staff member at each of the four 4-H Centers, provided additional natural resource and wildlife activities for more than 6500 Junior and Junior High Campers.

The annual week long Wildlife Conference was attended by 165 Junior High youth and 32 leaders. Average pre and post -test comparison scores represented an increase in knowledge of more than 50% percent.

The Wildlife Judging Contest included 4 district contests and 1 state event. Youth involved in this event included 143 4-H'ers. Sumner County, the Senior High State winner also placed in the national contest.

Senior High 4-H'ers are encouraged to complete service learning projects as a requirement for All Star membership. These youth and other younger 4-H'ers assisted in the development of the Cumberland Trail, and a multitude of projects ranging from recycling to site beautification

and habitat enhancement. Statewide, 14,777 youth and 787 adults donated 52,816 hours in serving 158,001 community members through 175 different environmental service projects in the Seeds of Service grant initiative. The value of these projects is estimated at \$72,410.

Native grasslands represent one of the most endangered ecosystems in North America. Wildlife associated with native grasslands as a result are threatened by this habitat loss. Species of economic importance, such as the northern bobwhite, have experienced significant population declines over the past 30 years. Developing proactive management strategies for these species is desirable at this time before these species become threatened or endangered and management options become more limited. Researchers have developed a research project at Fort Campbell Military Reservation in Tennessee and Kentucky to evaluate how well grassland birds are doing in areas where habitat has remained largely intact over the 60 years since the military has managed this landscape. Research results indicate that wildlife populations are being sustained on Fort Campbell in spite of widespread declines elsewhere in the region. These results suggest that the population declines of grassland birds, such as the northern bobwhite, would best be addressed by landscape scale changes in land management practices. Small-scale habitat management aimed at individual landowners are not likely to be successful without consideration of the landscape context.

Forest Resources Management:

Over 70 percent of the land area in Morgan County is in forests--with 13 percent of the total forested area being pine (Yellow pine, White pine). A Southern Pine Beetle infestation over the past 3 to 4 years has killed practically all of the pine. The state/federal government has \$3,000,000 available for cost share for helping land-owners re-forest pine beetle killed areas. Additionally, many landowners had questions about writing pine beetle losses off of their taxes--as a casualty loss. Extension networked with other agencies and planned and executed a multi-component program for educating landowners on how to re-forest Southern Pine Beetle killed areas, cost share programs available and how to prepare and handle casualty losses in the future. An Extension sponsored mass media blitz--15 radio programs and 6 news articles in a weekly news column were used to spread the word about the new cost-share program and the need to "set-up the books" to claim losses from beetles, ice storms, etc. A one page fact sheet was also developed and distributed through the Extension Office. In November 2002--and educational program introduced the Southern Pine Beetle Program. Twenty-seven (27) landowners attended. In March 2002, 28 landowners participated in an educational program on "Options for dealing with the Southern Pine Beetle Killed Areas." In June 2002, a timber tax workshop was held in the county with 30 attending. In addition to the educational programs--office visits, on-site visits were used extensively to distribute information about the cost-share program, how to get started with re-forestation of pine beetle killed areas and the need to establish a basis on timber.

A one week workshop for K-12 teachers was held in Jackson and Knoxville, TN during the summer of 2002. Content of the workshop includes outdoor laboratories, visits to forest industries and training in Project Learning Tree module. UT Extension and Experiment Station

personnel, with the cooperation of the Tennessee Forestry Association and forest industry, provided leadership and training for the workshop. Workshop offered for college credit or inservice credit. Thirty five teachers representing 1,260 contact hours of instruction attended the workshop. These teachers will use information gained from the workshop in their classes with an average of 200 students per year, representing 7,000 students. Teachers spend one week away from home during the summer to attend the workshop with the room and board on a college campus provided free of charge by the financial sponsors. Evaluations of the workshop by participants have consistently averaged between 4.8 and 4.9 on a 5.0 point scale.

The Tennessee Master Logger Program (TMLP) graduated 93 loggers (3,720 contact hours of training) impacting an estimated 25,000 acres of forest land consisting of 75 million board feet of timber harvested with a value of \$11 million to landowners. The continuing education program with 15 classes (8 hours of instruction per class) had 404 participants and 3,232 contact hours. Results from the research study conducted by UT indicate that there was a substantial association between BMP implementation and logger training, i.e., those loggers who received training from the TMLP were more likely to implement BMPs during logging operations than those loggers who were not trained. Thus, the TMLP has contributed to improved implementation of BMPs by loggers in Tennessee.

Timber sale packets were developed by Forestry Specialists giving landowners a quick list of "what-to-do" before they begin the process of selling timber. Timber tax workshops were held in Columbia and Centerville to educate landowners about the tax laws and how they can be used by forest landowners. An area field day focusing on hardwood management, pine management, BMP's, wildlife enterprises for landowners and a discussion of the new farm bill was held for landowners in the Upper Cumberland Area of Middle Tennessee. An educational workshop was held for 4-H members and the area food plot winners were announced at this event. Agent continues to work with the newly formed forestry association and the group meets quarterly to keep members informed on forestry issues. Agents developed a series of news articles published in the local paper informing the general public on forestry matters. Agents works with area cluster agents to develop programming for landowners in these counties.

The 4-H Forestry education program had an excellent year in 2002. Noteworthy accomplishments include 1) distribution of compact discs containing training materials for the 4-H Forestry Judging Contests.(This information was provided by the National 4-H Forestry Invitational Committee), 2) conducted a Forest Site Evaluation event at the State 4-H Forestry contest. This achieves long stated goal of conducting a team event that required a critical synthesis of the knowledge and skill presented in other aspects of the overall contest. The contest requires site and forest evaluations and the preparation of management suggestions for a hypothetical landowner. 3) participated in Knox Co. Arbor Day/Releaf program. The project enrollment in forestry was 4799, with additional participation in Forestry judging (180), Wildlife conf. Forestry lecture (180) and 4-H Jr. High School (12) over 5000 young people participated in 4-H forestry, this year. Students generally seemed to enjoy and grow during their participation in 4-H Forestry activities. Anecdotal evidence and direct contact indicate improved knowledge and skills for most of the students. Many 4-H Forestry participants will ultimately own trees and

perhaps own a forest these folks will have a different experience than those who never participated in a 4-H Forestry program.

The research focus of the Tennessee Quality Lumber Initiative (TQLI) is to examine the effect of real-time statistical process control (SPC) on lumber thickness variation and target sizes. The effect of thickness variation and target size reductions on log recovery, lumber quality and cost savings were also investigated. Case studies were conducted at two hardwood sawmills in the southeastern U.S. and a softwood sawmill in Oregon. The research program complements the research mission of the Tennessee Forest Products Center, which is to ensure the competitiveness of the forest products industry in Tennessee, the region and beyond. Lumber Thickness Variation and Target Sizes - There was statistical evidence at the three case study sawmills that real-time SPC had an effect on target sizes. Improved awareness of real-time lumber thickness may have led to immediate reductions in target sizes at all three sawmills. Analyzing sources of thickness variation and reducing thickness variation resulted in long-term reductions in target sizes. One case study sawmill had a statistically significant long-term reduction in target sizes of approximately .120” for 4-quarter lumber. The other two sawmills experienced statistically significant long-term reductions in target sizes of approximately .030” for 4-quarter lumber. Lumber Recovery and Lumber Quality - Lumber recovery improved at all three case study sawmills. There was statistical evidence that lumber recovery increased from 0.2% to 1.6% at the three sawmills. One sawmill had a significant improvement in “Common and Better” lumber grade of 4%. Lumber grade improved from reductions in within-board thickness variation (*e.g., thin-edges*).

Wildlife Management:

The white-tailed deer is the most popular big game animal in Tennessee and the conterminous United States. Through restocking efforts and regulated hunting, white-tailed deer populations have rebounded from all-time lows in the early twentieth century to approximately 33 million animals today. To assure continuance of the successful deer management program in Tennessee, four educational training seminars and workshops were given to 125 people, representing natural resource professionals, landowners, and students. The sessions concentrated on explaining deer population dynamics and the relationship of the deer herd with habitat conditions and the effect on other wildlife species. They were instructed how to improve the condition of the deer herd through non-traditional hunting regulations and habitat improvement. Over 1,000 Extension publications with this information was distributed. Demonstration food plots were established to determine germination rates, deer preference, and resistance to browsing. Data collected from these plots were incorporated into two Extension publications, reaching over 2,000 people. Quality Deer Management (QDM) programs were implemented on seven areas and a research project was initiated on the Hobart Ames Plantation. Funding from outside sources has provided \$25,000 to support these projects. These programs are actively taking steps to improve the sex ratio and age structure of the herd. Additional work involves habitat improvement, either through establishing food plots or other habitat improvement practices, such as timber stand improvement and the use of prescribed fire in fields and woodlots.

Historically, elk (*Cervus elaphus*) ranged throughout a large part of North America. As European settlers moved westward across the United States, many populations and even subspecies of elk became extirpated. Loss of habitat and unregulated hunting reduced elk numbers nationwide. The eastern elk (*C. e. Canadensis*), which ranged as far south as Louisiana, Mississippi, Alabama, and Georgia, became extinct. Researchers at the University of Tennessee have been establishing movements, mortality, recruitment and habitat use of reintroduced elk in the Cumberland Plateau area of east Tennessee, adding to the knowledge base of elk ecology in eastern North America. Tennessee Wildlife Resources Agency restored 136 elk to the upper Cumberland Plateau. All the animals originated from wild-trapped stock (*C. e. manitobensis*) within the enclosed area of Elk Island National Park located about 40 miles east of Edmonton, Alberta, Canada. All animals were fitted with telemetry collars or ear tags for monitoring after transportation to Tennessee. The first release consisted of 50 animals of various sex and age groups release on December 19, 2000. A second release of animals occurred on February 28, 2001 at the same site. This second release consisted of 36 animals, primarily young animals of both sexes and young spike bulls. An additional 50 animals were released February 14, 2002. These were considered hard releases, where animals were captured, transported, and released without a period of acclimation. All animals were tested prior to importation for diseases affecting native and domestic ungulates. A total of 22 animals were confirmed dead as of September 1, 2002. Two animals died in Kentucky. Thirteen of the animals were tested for chronic wasting disease and were negative. No communicable diseases have been identified during necropsies. Annual survival measured by Kaplan-Meier analysis did not differ by sex or age class and was 0.79 (SE = 0.04). Most of the elk (76.4 percent) have remained within a 10 km radius of the release site on Royal Blue Wildlife Management Area, Tennessee. We are currently planning on releasing 30 more animals in the coming year. Additional data will be collected on food habits, genetic relatedness of groups, reproductive effort, and habitat selection. While the release of elk to the area has been successful thus far, restoration of a native species requires continual research and monitoring to ensure that we maintain healthy, productive elk populations in Tennessee while minimizing human-elk conflicts.

Landowners want to improve their forests and woodlots for wildlife. To assist them in their goals, seven seminars were given to 350 people, including natural resource professionals, landowners, and students. Demonstration sites were maintained on two wildlife management areas that show techniques used in managing woodlots, primarily for wildlife. In these stands, thinning and burning have been used to improve habitat for a variety of wildlife species. In 2000, a cooperative study was initiated with the TN Division of Forestry and the TN Wildlife Resources Agency (TWRA) to compare the effect of different silvicultural techniques (including various thinning and burning treatments) on wildlife habitat in upland hardwood forests. Two MS students in the Department of Forestry, Wildlife, and Fisheries have worked on the project, which will be completed in summer 2003. In addition, another cooperative study with the US Forest Service (USFS), NC Wildlife Resources Commission (NCWRC), and the Ruffed Grouse Society was initiated in 1999 to investigate the effect of alternative silvicultural practices on ruffed grouse in the southern Appalachians. Three graduate students (2 MS and 1 PhD) in the Department of Forestry, Wildlife, and Fisheries have worked on this project. The USFS, TWRA and NCWRC are currently using information gathered in this study to better manage ruffed

grouse populations, impacting wildlife on over 50,000 acres of forest land. More than \$320,000 in grants and contracts has been generated to implement these forest management projects in the last four years.

Allocations for Goal 4 Projects and Activities:

UT 1862 Research:

- Hatch - \$736,261
- Multistate - \$274,570
- McIntire-Stennis - \$439,176
- State Outlays - \$4,250,265

UT 1862 Extension:

- Smith-Lever b and c - \$576,807
- Smith-Lever d - \$82,828
- State and County Allocations - \$2,138,226

TSU 1890 Extension:

- Smith-Lever b and c - \$332,119
- State and Local Allocations - \$16,136

FTE's for Goal 4:

UT 1862 Research - 21.0

UT 1862 Extension - 25.3

TSU 1890 Extension - <unavailable at time of printing>

KEY THEME - LAND USE/SOIL EROSION

TITLE: 4-H Environmental Stewardship

ISSUE: Our youth are exposed to information everyday about abuses of our environment. They need to be able to determine between facts and fear tactics and gain an understanding of how the persuasion process works. Issues of solid waste management, water pollution, conservation of natural resources and land use are major concerns for residents, as found in the Tennessee Department of Environment and Conservation (TDEC) report.

WHAT HAS BEEN DONE:

The Agent:

- conducted four school club meetings w/environmental educational program presentations,
- introduced and promoted related environmental opportunities for outside school participation,
- used existing newsletter and mass media to inform/update and recognize efforts and program accomplishments by both individuals and group efforts,
- increased and/or established marketing efforts to increase participation in activities and events,
- recruited and trained volunteers to assist with program phases,
- served as county contact for annual ReLeaf Tennessee tree give away program.

IMPACT:

- the agent was county contact for over 1300 4th grade students at 17 local schools which participated in the annual ReLeaf Tennessee program by receiving and planting tree saplings in recognition of Arbor Day
- eleven hundred junior & junior high members were exposed to environmental programming with an emphasis this year on forestry, tree importance and wildlife of Tennessee
 - * members learned and were able to identify 5 to 10 different species of native Tennessee trees,
 - * members learned tracking and identifying methods used with various species of wildlife,
 - * members were introduced to global environmental thinking, where they tracked environmental actions around the globe - discussion groups were formed to relate discovered information back to the larger groups,
 - * members had to relate discoveries to everyday familiar events and then give solutions for concerns that they found detrimental to life as we know it.

FUNDING: General Extension Funds

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TITLE: Improving Natural Resource Stewardship Skills in Teens

ISSUE: Approximately 70 percent of the landscape in Morgan County is in forestland (270,000 acres). Morgan County is also home to the Obed Wild & Scenic River which has a high "Clean Water Designation". Approximately 40,000 acres of the 80,000 acre Catoosa Wildlife Management area is in Morgan County. Other large natural resource holdings include: University of TN Exp. Station; Frozen Head State Park; Lone Mtn. State Forest; Historic Rugby; and part of BSF National River & Recreation area. Because of the resource--Tourism, Logging, Tree Farming; Oil & Gas Exploration and Farming are important enterprises. Also--many areas of the county are unsuitable for home sites. Therefore, there is a special need to educate youth to be good stewards of our natural resources.

WHAT HAS BEEN DONE: Four (4) 4-H youth were trained in wildlife judging. Training sessions were conducted by an adult volunteer leader and the ag agent. Three (3) of the youth trained participated in wildlife judging at the district level. Two Jr. High teen and 1 sr high teen

were recruited to attend state 4-H wildlife conference. The senior teen went as a camp assistant. The Extension agent obtained sponsorship for all three teen to attend wildlife conference. Three programs were presented to Jr. High (7th & 8th grade) youth in Sunbright--which spotlighted 4-H Wildlife & Natural Resource Projects and Activities (to create interest). One adult leader was recruited for the shooting sports program. A land judging team was trained and they participated at the district level in Van Buren Co. News articles (in local newspaper) were used to give recognition to participants. The ag agent also did 2 radio programs which talked about opportunities for 4-H youth to get involved in natural resources education. Explorer, Junior and Sr. high levels were represented in demonstration day activities (Wildlife Project) at the district level. In addition--a needs assessment of teachers involved with outdoor classrooms was conducted.

IMPACT: Program records and follow-up surveys revealed the following impacts:

Teacher assessment of 4-H Soil Judging Training

-Students Knowledge participating in training increased by 100 percent in 4 targeted areas which included (1) Physical characteristics of soil (2) Interpretation of soil characteristics (3) Recommended soil Management practices (4) Home site suitability of soils.

-Students skills increased by 100 percent in 8 specific soil judging training areas.

Teacher surveys revealed the following behavior changes:

-100 percent of students have a better appreciation of good soil stewardship

-75 percent have a better awareness of good site, bad site selection for home sites.

Student Surveys of Soil Judging revealed:

-66 percent of those students participating in soil judging indicated that there were specific areas on the property where they live that could be improved to prevent soil erosion.

-One senior high member attended State 4-H Roundup in the Wildlife Project area.

-Two Jr High members have increased their interest in 4-H after attending wildlife conference.

-The Extension agent is now working with 2 schools on improving outdoor classrooms.

-3 Teen 4-H members have improved their ability in making judgments concerning wildlife management by their participation in wildlife Judging.

FUNDING: Regular Extension Service funds. County Government Sponsorship.

#

TITLE: Natural Resources Management

ISSUE: Forest Landowners are losing \$20 per acre per year, due to a lack of sophistication in managing and marketing timber. Water Quality is at risk of impairment, due to inadequate attention to erosion prevention during the logging process.

WHAT HAS BEEN DONE: Extension hosted a site for the regional satellite program - Master Tree Farmer II; it featured advanced information on forest and wildlife management. Protecting water quality and soil integrity were also featured. Timber marketing was one main topic. Extension provided a timber marketing field day, and a multi-county forestry, and wildlife management field day.

IMPACT: KASA of MTFII participants increased from 30% Poor, 50% Fair, 20% Average to 40% Average, 50% Good and 10% Excellent.

- participants expected to save a total of \$295,000
- participants expected to earn a total of \$335,000
- expected savings/earnings/acre of \$49.14
- expected savings/earnings/participant/hr- \$3333
- all nine participants plan to make changes in their forest management practices on their 12,820 acres of land
- two landowners gained \$39,000 (a 230%) increase when they used a private consultant to market timber. These landowners protected water quality on 163 acres.

FUNDING: Regular Extension funding, International Paper, Wayne County Schools (in-kind), Consulting Forester.

#

TITLE: Increasing Youth Knowledge of Natural Resource Conservation and Environmental Education

ISSUE: According to the Bradley County 4-H Advisory Committee, Bradley County youth have limited opportunities to learn about the environment and the importance of conservation. By learning about the environment and the importance of conservation at an early age, Bradley County youth will more than likely be more environmentally minded and adopt conservation practices as adults.

WHAT HAS BEEN DONE: A Conservation Club was organized and meetings were held once a month from February until May. Educational programs were presented in areas of wildlife, forestry, soil erosion, and water conservation. A pre-test and post-test was given to measure knowledge gained. A Forestry Judging Team was organized and practices were held twice a week from February all the way through May. Students learned how to identify trees, insects and diseases found on trees, how to use a compass and how to pace, identify wood, measure tree diameter, and how to determine how many sawlogs are in a tree. Students also learned about conservation practices that are related to Forestry. A pr-test and post-test was given to measure knowledge gained. A Land Judging Team was organized and practices were held twice a week from September until October. Students learned about soil texture, available water holding capacity, erosion, potential environmental problems, suitability for a homesite, soil conservation

practices, and many other topics related to land judging. A pre-test and post-test was given to measure knowledge gained.

IMPACTS: 66 percent of the students who participated in the Conservation Club increased their knowledge of wildlife, forestry, soil erosion, and water conservation. 66 percent of the students who participated on the Forestry Judging Team increased their knowledge in tree identification, identifying insects and diseases found on trees, using a compass and pacing, measuring tree diameter and sawlogs, and identifying wood. 66 percent of the students who participated on the Land Judging Team increased their knowledge about soil texture, available water holding capacity, soil erosion, potential environmental problems, suitability for a homesite, soil conservation practices, and many other topics involved in land judging.

FUNDING: Regular Extension

#

TITLE: 4-H Youth Development: Natural Resources & Environmental Education

ISSUE: Cumberland County citizens have expressed an increased concern for environmental conditions in and around the county. Statistics show Tennessee is experiencing rapid growth and environmental changes which can dramatically affect the accessibility and quality of natural resources. National reports and publications state that the lack of youth knowledge and understanding of the environment and natural resources is increasing. Natural resources are definitely abundant in Cumberland County. Department of Agriculture statistics (1998 - Forestry Products Summary) reveal the county ranked second in the state in growing stock volume with 418.2 million cu.ft.. The county is geographically the 4th largest in the state with numerous opportunities for youth to learn the advantages of a clean environment and to appreciate it's natural beauty. A state park, local lakes, wildlife refuge, and thousands of acres of forested hills and valleys make it ideal for educational programming in this area. Cumberland County is one of the fastest growing counties with construction and clear cutting happening in most every neighborhood. This type of destruction of existing natural resources leads to removal of

trees, erosion of top soil and cloudy or muddy streams. In relation to this data, 2000 4-H enrollment data indicate 42 youth selected the conservation and environment project; 187 selected the forestry project; 668 selected the wildlife and fisheries project; and 51 youth selected the plant science project. This information combined with the fact that 2000 4-H enrollment data also indicates 170 youth selected the forestry judging project; 84 youth selected the land judging project; and 20 selected the plant and seed identification judging project. These figures show an interest above and beyond what is presently being taught in schools or even through 4-H. Interest in natural resources and environmental conservation is growing with increased pressures placed by the state on recycling, reduced forested lands, composting, water and soil conservation, reduced landfill sites, etc. Informal interviews with Forestry Association and Natural Resources Conservation Service personnel point out the need for programming efforts to be made in this direction with 4th - 6th grade 4-H members. Data indicates that there

are numerous environmental conservation issues which could be addressed in Cumberland County 4-H programs that could help build awareness, increase knowledge, and encourage adoption of environmentally friendly practices.

WHAT HAS BEEN DONE:

- < A water conservation program was implemented with students in the 6th grade. This was a two part educational activity consisting of water conservation ideas and alternatives.
- < Land judging practices consumed time during August and September.
- < Classes in the 4th grade were involved in the Re-Leaf Tennessee project.
- < Two volunteer leaders attended the Volunteer Leader Forum to become acquainted with educating in natural resource areas.

IMPACT:

- ò Approximately 450 4-H members in the 6th grade were involved in the water conservation program this year. Surveys conducted prior to the program indicated that 32% of students were aware of the need to conserve water and knew how valuable a resource it is. 47% indicated in post program testing that they would help conserve water through various methods; i.e. turning it off when brushing their teeth, taking less time in the shower. A post survey was not conducted to determine adoption rate of conservation practices.
- ò Four students were trained in soils judging using videos, on-site practices, and classroom lecture with only 2 of these competing in the district contest.
- ò Twenty-five 4th grade classes received a bundle of 30 trees and educational packet of materials toward new knowledge in forestry. Several teachers stated how "excited the students are each year" to receive the bundles.

FUNDING: Extension Funds

#

TITLE: Sustainable Tillage Systems Adopted on Most Tennessee Cropland

ISSUE: The most common source of water pollution from cropland in Tennessee is sediment from eroding fields. Conservation tillage, especially no-till, is the most economical and sustainable strategy for reducing erosion.

WHAT HAS BEEN DONE: Presentations were made at one county meeting, one association meeting and one field day this year, reaching directly 300 people. Three inservice training sessions were conducted for extension agents, reaching 70 agents with training in residue management, buffer strips and conservation programs. Three update training sessions for Certified Crop Advisors were also conducted, reaching 100 CCAÆs , largely from agribusiness. These efforts of course built on extensive efforts in past years.

IMPACT: Use of sustainable soil management systems in Tennessee crop production has reached a high level. No-till was used on 60 % of the acreage of major crops in 2002, and other types of conservation tillage were used on 23 %, leaving only 17 % in full conventional tillage. The use of conservation tillage can be estimated to be reducing potential soil erosion by 20 million tons annually in Tennessee. Sustainable conservation tillage systems are being used on 83 % of Tennessee cropland, compared to 65 % three years ago. The total reduction in potential soil erosion from the use of conservation tillage exceeds 20 million tons annually.

FUNDING: Regular Extension funds.

#

TITLE: Native warm-season grasses (NWSG)

ISSUE: Land conversion, clean-farming practices, and the establishment of tall fescue pasture have limited the amount of nesting and escape cover available for many wildlife species in Tennessee. Establishing NWSG and associated forbaceous cover is an excellent way to improve early successional habitat for wildlife, particularly northern bobwhites, rabbits, and several species of songbirds. However, a lack of knowledge concerning establishment and management techniques has limited the success of many private landowners.

WHAT HAS BEEN DONE: Demonstration/research plots of NWSG were established and maintained on 4 UTIA Experiment Stations to develop sound establishment and management techniques. In addition, buffer strips were established around fields and along creeks on demonstration farms in an effort to improve wildlife habitat and control erosion and sedimentation. Control farms were identified for comparison purposes. Ten seminars and workshops (attended by 300 people) have been given to adult and professional groups.

IMPACT: Extension agents, other professionals, and private landowners have learned the correct techniques for establishing and managing NWSG, including the use of prescribed fire to improve and manage habitat conditions for wildlife. In a cooperative educational effort with the NRCS and TWRA, Tennessee landowners have established approximately 19,500 acres in NWSG in the last 4 years. Dramatic improvements in habitat quality have been made. Participating landowners have seen bobwhite quail populations increase by an average of 100 percent.

FUNDING: Outside sources have provided approximately \$2,000 of in-kind support (seed and equipment) to make these demonstration areas possible.

#

TITLE: Forestry & Forest Products

ISSUE: The Tennessee Division of Forestry reports that Hardin County has 229,300 acres of woodlands. This represents 60% of the total land in the County. Approximately 75% of the

timberlands are owned by over 600 private non-industry landowners. 1,692 people are employed by the timber industry in Hardin County with a total payroll of over 31 million dollars. Some of the major problems facing Hardin County forest landowners are how to best market their timber for profit, timber taxes and Legislative Laws. Surveys indicate only 25% use a professional forestry service when marketing their timber and 50% use a written sales contract when selling their timber.

WHAT HAS BEEN DONE: The agent meets with the Forest Landowners Advisory Group monthly to discuss program direction and forest issues. The Forest Landowner Association meets quarterly with a membership of 168 members. Extension is responsible for the educational programs, meetings and field days. Programs landowners received in 2002 include: Hardwood Management, Effect Erosion has on Stream Banks after Timber Harvest, Pine Management for Wildlife, Timber Tax and Legislative Laws, and Log Grading Workshop. The programs were conducted by professional Extension personnel, Area Sale Representatives and also private consultants. Our local State Representative provides information on Legislation changes and pending laws.

IMPACT:

- 10 landowners board meetings to discuss program directions. Agent and Extension Forestry plan programs.
- 4 landowner meetings and 2 field days were attended by 100 males and 20 females in 2002.
- 6 people attended area wide Timber Tax Workshop.
- 3 people attended the Satellite Shortcourse on forest management.
- 4 news articles and 4 circular letters were written pertaining to forestry in 2002.
- 52 loggers have completed the Master Logger Program.
- Landowner membership increased 5% in 2002.

FUNDING: Extension Service Funds; Landowner Association Members; Local Timber Industries Consultants.

#

TITLE: Response of Staked Tomatoes to No-tillage Environments

ISSUE: Upland silt loam soils of the central United States in which tomatoes are conventionally planted or transplanted usually are prepared by cultivating with a moldboard or chisel plow followed by disking and harrowing to pulverize large clods and to smooth the soil surface. These preparative measures result in a loose, usually weed free, soil environment. Staked tomatoes are often grown on land with moderate to excessive slope and on some of the most easily eroded soils, especially in the southeastern U.S. No-till tomatoes, like many other crops, can be grown in a no-till cultural system.

In addition to reducing erosion, cover crops or mulches in a no-till culture can improve crop yields through modifying soil temperatures during the summer season, reducing evaporation

from the soil surface, reducing soil bulk density, protecting surface soil structure, forming biopores, controlling some weed species, releasing nutrients, and reducing harmful insect population densities. Most tomato production areas could potentially benefit if no-till production techniques would be adopted to minimize soil erosion.

WHAT HAS BEEN DONE: We compared conventional tomato production with no-till cultural methods using cover crops of wheat straw, hairy vetch or foxtail millet. We also included studies on the occurrence of diseases and the populations of harmful and beneficial insects in each cover crop and compared them with their occurrence under conventional tillage.

IMPACT: Total yield of tomatoes was no different whether grown in wheat stubble, hairy vetch or by conventional tillage methods. With small modifications in management of the crop, tomato growers can produce no-till crops equal to conventional crops with all the benefits of no-till culture.

FUNDING: Hatch Act

#

TITLE: Conservation Buffer Tour at the Milan No-Till Field Day

ISSUE: Conservation buffers are effective practices. Producers need to learn more about them as a first step toward their use.

WHAT HAS BEEN DONE: Buffer demonstrations were established at the Milan Experiment Station. A conservation buffer tour was added to the 2002 Milan No-Till Field Day. It included presentations on the water quality, wildlife and erosion control benefits of buffers; establishing and managing cool season and warm season grasses in buffers; and cost-share assistance available as well as opportunities to walk through buffers with resource specialists.

IMPACT: More than 300 people participated in tours. The buffers have also been used in other educational programs at the station and continue to be a programming resource.

FUNDING: Smith-Lever 3(b) & ©, State (Tennessee Wildlife Resources Agency)
Other (NRCS)

#

TITLE: Native Warm-Season Grassland Restoration Program

ISSUE: The native warm-season grassland restoration program is important because grasslands provide many kinds of wildlife with food and cover. Grassland management is necessary to keep grasslands productive. They also help wildlife by controlling soil erosion.

WHAT HAS BEEN DONE: Graduate researchers with the University of Tennessee are managing a statewide effort to help the Tennessee Wildlife Resources Agency (TWRA) and the Natural Resources Conservation Service (NRCS) assess the effectiveness of a multimillion dollar grassland restoration program. The ultimate goal is to help Tennessee landowners more effectively carry out land management on their properties.

IMPACT: The program is helping Tennessee landowners more effectively carry out land management on their properties. It is also allowing the TWRA and NRCS to measure the success of its grassland restoration program.

FUNDING: Other: Tennessee Wildlife Resources Agency and U.S. Fish and Wildlife Service

#

Title: RUSLE Updates Soil Erosion Prediction Technology

Issue:

Soil erosion is a major threat to both soil and water resources, as removal of soil particles damages the soil's productivity and diminishes the quality of the water where that sediment may be deposited. We know how to stop erosion by limiting tillage or by implementing other best management practices. That knowledge is of little use, however, unless we can help the agricultural producer, logger, mine reclamation expert, or other conservationist compare alternatives to get the best conservation implemented at the least cost. The best tool for carrying out these comparisons has proven to be a computer-based erosion prediction model. The RUSLE erosion prediction model is an improvement on the Universal Soil Loss Equation (USLE), which has been used for such estimates for almost 40 years. RUSLE brings soil erosion prediction technology up-to-date. Although versions of RUSLE have been in use for conservation planning by the USDA-NRCS since 1991, RUSLE technology itself is being updated to provide better, more user-friendly programming with broader applications.

What has been done?

Work on RUSLE has continued under a Cooperative Agreement between USDA-ARS, the University of Tennessee, and USDA-NRCS, with additional funding for the USDI Office of Surface Mining and the Soil & Water Conservation Society. Substantial improvements have been made to the RUSLE erosion science, both to increase its applicability to a wider variety of settings, and to provide answers more useful in estimating water quality impacts of the eroded science. In addition, work has continued on the computer interface for the RUSLE program, yielding a Windows©-based interface that can easily be modified for various users and uses. This new program, dubbed RUSLE2, has just undergone major testing by USDA-NRCS and is being implemented nationwide by NRCS. Once this is completed, the program will also be made available to the general public.

Impact:

Older versions of RUSLE are currently in use in over 2500 field offices of the USDA-NRCS for conservation planning. In addition, almost 1200 copies of the program have been delivered by USDI-Office of Surface Mining to mine reclamation and construction site experts over the past three years. RUSLE is taught in many soil and water conservation curricula across the country, and is often used as the benchmark in scientific studies seeking to improve erosion prediction. The new version of RUSLE is so much easier to use and provides so many more answers that it is expected to quickly assume the place of earlier versions, as well as expanding the ability to do erosion calculations to many new users.

FUNDING: Hatch Act, USDA-ARS Cooperative Agreement, USDA-NRCS Cooperative Agreement, USDI-Office of Surface Mining, Soil and Water Conservation Society, U.S. Army Corps of Engineers

#

TITLE: Sustainable Soil Management Systems for Tennessee Cropland

ISSUE: Reducing the negative impacts of crop production on the environment, including water quality, wildlife habitat and soil quality, is an important concern when seeking to enhance the sustainability of American agriculture. To support and maintain balance between agricultural production and environmental concerns in Tennessee will require improved residue management systems for cropland, extended usage of conservation buffers and development of a group of professional crop advisors with training in sustainable production methods through the Certified Crop Advisor program.

WHAT HAS BEEN DONE: Extension programs were conducted this year emphasizing residue management, buffer strips and the training of Certified Crop Advisors. Presentations were made at one county meeting, one association meeting and one field day this year, reaching an audience of 300 people. Three in-service training sessions were conducted for extension agents, reaching 70 agents with training in residue management, buffer strips and conservation programs. Three training update sessions for Certified Crop Advisors were also conducted, reaching 100 advisors, largely from agribusiness. A training session for CCA exam preparation for 30 potential advisors was conducted.

IMPACT: Use of sustainable soil management systems in Tennessee crop production has reached a high level. No-till was used on 60 percent of the acreage of major crops in 2002, and other types of conservation tillage were used on 23 percent, leaving only 17 percent in full conventional tillage. The use of conservation tillage is estimated to reduce potential soil erosion by 20 million tons annually in Tennessee. The 83 percent of Tennessee cropland now under conservation tillage is a considerable increase compared to 65 percent three years ago. The total reduction in potential soil erosion from the use of conservation tillage exceeds 20 million tons annually.

Furthermore, with more than 200 agricultural professionals now certified as crop advisors in Tennessee, greater results can be expected in the future. Participation in the (Buffer Strip) CRP program has increased rapidly in Tennessee over the past two years. Acreage placed in buffer strips under this program has shown an increase of more than 200 percent in the past two years, with much of the new acreage planted in wildlife-friendly cover, such as warm-season grasses.

FUNDING: Smith-Lever 3(b) & ©, State Extension Funds, TN Certified Crop Advisor Board, registration fees

#

TITLE: Weed Management in Agronomic Cropping Systems

ISSUE: No-tillage farmers, agricultural chemical manufacturers, distributors, dealers and crop consultants should be interested in weed management in agronomic cropping systems because this impacts the success of no-tillage production of agronomic crops and opens opportunities to develop and mechanize alternative control measures and sustain no-tillage production systems on the erodible soils of West Tennessee and Northeastern Mississippi.

WHAT HAS BEEN DONE: Researchers at the University of Tennessee have identified Roundup resistant horseweed in most of West Tennessee. It seems to be spreading rather rapidly, especially where glyphosate (Roundup UltraMax, Touchdown IQ, etc.) is used exclusively for vegetation control prior to planting and for in-crop weed control in Roundup Ready® crops. Research has shown that 2,4-D and dicamba (Clarity) are the most economical alternatives alone or as tank mixtures with glyphosate for control of horseweed and other weeds prior to planting no-tillage crops. Crop control is best achieved with dicamba postemergence in corn, metribuzin (Sencor, Canopy SP) preemergence or chloransulam-methyl (FirstRate) postemergence in soybean, and MSMA postemergence or MSMA plus diuron (Karmex, Direx) post-directed in cotton.

IMPACT: Producers have experienced losses in cotton lint yield and quality or large increases in production costs related to obtaining control of glyphosate-resistant horseweed. Some producers are considering returning to conventional tillage to achieve control of horseweed. This would undoubtedly increase soil erosion on many of these soils. Through UT's research and education program, growers have implemented control strategies to manage glyphosate-resistant horseweed. The results have been an overall better weed management program that will abate the development of other resistant weeds with little increase in cost of production. Management will also conserve soil and water through continuation of no-tillage production systems.

FUNDING: Hatch Act, Commodity (Describe):__TN Soybean Promotion Board , Other (Describe):_Monsanto and Syngenta are providing partial support of research

#

TITLE: Native Warm-Season Grasses Improve Habitat for Wildlife

ISSUE: Land conversion, clean-farming practices and the establishment of tall fescue pasture have limited the amount of nesting and escape cover available for many wildlife species in Tennessee. Establishing native warm-season grasses (NWSG) and associated forbaceous cover is an excellent way to improve early successional habitat for wildlife, particularly northern bobwhites, rabbits, and several species of songbirds. However, a lack of knowledge concerning establishment and management techniques has limited the success of many private landowners.

WHAT HAS BEEN DONE: Demonstration research plots of NWSG were established and maintained on four University of Tennessee Institute of Agriculture (UTIA) Experiment Stations to develop sound establishment and management techniques. In addition, buffer strips were established around fields creeks on demonstration farms in an effort to improve wildlife habitat and control erosion and sedimentation. Control farms were identified for comparison purposes. Ten seminars and workshops (attended by 300 people) have been given to adult and professional groups.

IMPACT: Extension agents, other professionals, and private landowners have learned the correct techniques for establishing and managing NWSG, including the use of prescribed fire to improve and manage habitat conditions for wildlife. In a cooperative educational effort with the Natural Resource Conservation Service (NRCS) and the Tennessee Wildlife Resources Agency (TWRA), Tennessee landowners have established approximately 19,500 acres in NWSG in the last four years. Dramatic improvements in habitat quality have been made. Participating landowners have seen bobwhite quail populations increase by an average of 100 percent.

FUNDING: UT Agricultural Extension Service, BASF Chemical, Tennessee Wildlife Resources Agency

#

KEY THEME - WATER QUALITY

TITLE: Clean Water in Tennessee Priority Program

ISSUE: Ample supplies of clean water for drinking, agricultural production, business and industry, recreation and other uses is a leading concern among Tennesseans. Citizen surveys and focus groups consistently document the importance of water quality issues.

WHAT HAS BEEN DONE: An interdisciplinary team of state, area and county faculty has been formed to give leadership to educational programming addressing this priority. The team works in close collaboration with the animal waste management priority. Educational programming includes:

1. Developing and delivering information on the environmental provisions of the new Farm Bill to farm families in 28 local meetings.
2. Providing in-depth training on the Farm Bill to county faculty in four two-day training programs to equip them to assist their clientele in effectively using environmental programs in the legislation.
3. Organizing and conducting a field trip in the Conasauga watershed for EPA personnel working with the ag sector to increase their awareness and understanding of rural water quality issues as they develop and implement federal regulations.
4. Developing a Comprehensive Nutrient Management Plan (CNMP) for a family size dairy and conducting a field day at the dairy to educate producers and others about the CNMP process. As far as we can determine, this is the first complete CNMP meeting all federal standards developed for a dairy in the USA.
5. Planning and conducting three 4-H agent water quality training programs in collaboration with Tennessee's Project WET.
6. Assisting to develop conservation buffers at the Milan Experiment Station and adding a buffer tour to the Milan No-Till Field Day in collaboration with the Station Superintendent, NRCS and TWRA.
7. Conducting the aquatics challenge for ten regional Envirothons and the state Envirothon as well as assisting with the comprehensive question at the state competition.
8. Participating in the development of the Southern Region Water Quality Planning Committee (SRWQPC) website which includes information on key water quality issues as well as regional and state programs.
9. Tennessee's share of of the Southern Region Watershed Resource Management grant obtained through the SRWQPC helped support the following educational activities:
 - a. The CNMP element writers certification workshop
 - b. The CNMP Field Day
 - c. The nine county Hay Day in West Tennessee
 - d. The middle Tennessee forestry/water quality field day
 - e. The Weakley County Youth Water Quality Day
 - f. The East Tennessee Agriculture and Community Expo
 - g. Water quality education at the Ridley and Austin 4-H Centers

IMPACT: The impacts of these educational programs and activities include:

1. More than 1,000 Tennesseans learned about conservation programs and other provisions of the 2002 Farm Bill together with ways to assess their options as a result of the Farm Bill educational programming.
2. Eighty county and area faculty increased their knowledge of the 2002 Farm Bill as well as their abilities and skills to teach about the provisions of the Bill.
3. Ten EPA ag sector contacts from across the nation participated in the Conasauga field trip; they reported greater understanding and awareness of rural water quality issues and impacts of federal regulation.
4. More than 200 people participated in the CNMP field day. They know more about comprehensive nutrient management planning as a result. A CNMP is required for some farmers to participate in the EQIP program under 2002 Farm Bill provisions. Farm families who attended the event have a better understanding of how to meet this requirement and develop a CNMP for their farms. Also, the people who developed the CNMP are better qualified to assist farm families as a result of this pioneering effort.
5. Fourty three 4-H agents increased their water quality knowledge as well as their abilities to teach about clean water issues through the in-service training programs. On average, a 4-H agent works with 1,000 youth, thus, over 40,000 Tennessee youth will benefit.
6. Approximately 300 people participated in the Buffer Tour at Milan and increased their understanding of the water quality and other benefits of buffers.
7. Over 600 high school students and their teacher-coaches learned about water quality issues and ways to protect and improve water resources through their participation in the Envirothon program.
8. The SRWQPC website is ready to launch in 2003. It offers a 21st century educational channel for clean water issues.
9. As a result of the grant funds available through the regional project:
 - a. Participants in the CNMP element writers workshop benefitted from the real-world case study example created at the Tennessee dairy and also learned about other BMPs from a comprehensive BMP handbook developed and reported on in 2001.
 - b. The CNMP field day was successfully conducted.
 - c. Over 300 individuals learned about practical ways to improve steam crossings, heavy use areas, alternative watering sources and other BMPs during the Hay Day.
 - d. Some 30 forest landowners learned about ways to protect water quality during forest management activities at the forestry field day.
 - e. Over 200 youth learned about the importance of clean water and ways they can help protect our water resources during the Weakley County Day.

f. More than 300 farm families, civic leaders and interested citizens participated in the East Tennessee Expo. They took part in seminars and activities that featured ways to protect and improve water resources on farms, in forests and in and around homes. A fishing rodeo involved youth in a fun event while underlining the central role clean water plays in our quality of life.

g. Over 2,200 youth and teachers learned about water quality issues at the Ridley and Austin 4-H Centers.

FUNDING: State and federal grant funds. Valley Association grant funds. Water quality funding and Extension program funds. A total of \$104,950 in grant funds were obtained from outside sources to help support these educational programs during the year.

#

TITLE: Environmental and natural Resources issues/Urban interface

ISSUE: In needs assessment focus groups there is an overlapping concern from farmers and citizens of the County. Farmers have a real concern over the increasing land values and the shrinking of class-one soils as well as the liability and legal issues that shadows them from possible conflict with urban development. Currently there are county-wide zoning laws, that offer some protection. Citizens wishing to move to a rural setting are often awakened to the facts of commercial agriculture after they have moved into a new home. As agriculture continues to industrialize there is growing concern over several environmental issues.

WHAT HAS BEEN DONE: This is a totally new area of emphasis. The past year's efforts has been focused on program development, recruiting a number of agencies and community leaders to assist with future program delivery, and securing funds for program activities planned for 2002. Extension also acted arbitrator for numerous farm and home conflict incidences involving primarily pesticide drift problems in the past.

IMPACT: Efforts thus far have been in preparation for 2002 activities including:

- Securing \$6,600 in grant dollars through water quality initiatives.
- Involved 28 local, state and federal agencies, businesses, municipalities and leaders in program need and development.
- Assisted three rural homeowners and three farmers in finding solutions to pesticide drift problems without legal action being taken.
- Conducted 10 pesticide certification trainings involving 153 producers with additional educational efforts targeting pesticide drift and urban sprawl.

FUNDING: Regular Extension funds.

#

TITLE: Environmental Education Program

ISSUE: In a recent needs assessment survey, the following information was collected from classroom teachers and guidelines for the State of Tennessee Science Curriculum Standards:

- Teachers indicated a need for hands-on activities in cooperative groups to teach science.
- Teachers often have limited access to outdoor laboratories and other resources that provide the opportunity for hands-on science learning.
- The revised Tennessee Science Standards K-12 Guidelines is based on the premise that, "students learn science by doing science."
- The Tennessee Science Framework's Vision statement states, "Not all science learning takes place in the schools. Experiences with the natural and cultural environment greatly enhance scientific literacy."
- Tennessee's Science Standards K-12 curriculum guidelines want students to have the opportunity to experience hands-on science to enable them to become scientifically literate adults.

Based on the information collected, the Environmental Education Program at the Ridley 4-H Center continues to provide hands-on, experiential learning activities in an outdoor learning laboratory for students in grades K-8, teachers and volunteers.

WHAT HAS BEEN DONE: Based on the science curriculum needs of teachers and Tennessee's Science Guidelines, the Environmental Education Program at the Ridley 4-H Center provided hands-on, experiential learning activities in an outdoor learning laboratory for students in grades Kindergarten, 2nd, 3rd, 4th, 5th, and 6th grade students, teachers and volunteers.

The Environmental Education Program used various learning strategies such as games involving team initiatives and conflict resolutions which allowed participants to experience different environmental situations, enhance critical thinking skills and help them develop their own conclusions about how to approach or attempt to solve environmentally related problems. The Program's curricula addressed State Department of Education Science Curriculum Objectives.

The Environmental Education Program provided participants with hands-on learning in the areas of: agriculture, entomology, forestry, global connections, heritage skills, man & machines, pioneer cooking, staff-led scavenger hunts, team building, water/soil, and wildlife. Each class was designed to extend or enhance classroom curricula for both students and teachers based on the particular grade level.

IMPACT:

- 2,093 students, teachers and volunteers participated in the Environmental Education Program during the 2002 season
- 26 school groups participated in the Environmental Education Program during the 2002 season
- 85% of the participants(students and adults) rated their visit to the 4-H Center as excellent

---*96% of the participants(students and adults) stated they would adopt practices or behaviors learned as a result of participating in the Environmental Education Program
---*% of the participants(students only) indicated they had learned more about one or more of the following as a result of participating in the Program: agriculture - 96%, forestry - 98%, global connections - 94%, team building - 95%, water/soil - 97%, wildlife - 96%, heritage skills - 98%, pioneer cooking - 98%, entomology - 90%, man & machines - 67%, staff-led scavenger hunt - 90%

* = These percentages include only the fall evaluations.

FUNDING: The Environmental Education Program is self-supporting. Funding and support were secured through camp fees, grants and gifts. The Program received \$1000.00 from Dr. George Smith. The grant money allowed us to conduct a hands-on water quality education program in schools here in Middle Tennessee. This also allowed us to provide teachers with information about the Environmental Education Program. Several other grant proposals were written, however no funding was received. In August 2002, the Ridley 4-H Center Environmental Education Endowment Fund was established.

#

TITLE: Environmental Education

ISSUE: According to CLEAN, Inc, the local Keep America Beautiful affiliate, in one day Americans produce enough trash to fill the New Orleans Superdome twice. Lincoln Countains averave producing 6 lbs. of trash per day, while the national average is 4 pounds. 75% of all trash can be transformed into some form of energy. Litter decreases property values, hurts economic growth and tourism, and is a danger to animals and humans. According to Tennessee Dept. of Environment and Conservation statistics, :337 Lincoln County Households brought over 21,000 lbs of household hazardous waste to the 2,000 collection event. Event cost for the taxpayers was \$17,844.32. Considering these statistics, there is a need to assist Lincoln County youth in becoming better environmental stewards. Four-H members need to develop pride in their community and their school campus. Teachers, CLEAN, Inc. board, and county government leaders have suggested this need to be addressed by 4-H. Advisory committee members also suggested this as a top 5 need for youth in Lincoln County. This program will be directed to all K-9th graders. Lincoln County currently is the number three ranked county in terms of deer and turkey harvest in the state of Tennessee. Many farmers and youth use hunting rights as another farm enterprise in Lincoln county. Many calls come into the extension office requesting information on Wildlife food plots. Over 300 members checked wildlife judging as an interest on their 4-H enrollment forms.

WHAT HAS BEEN DONE:

*Provided a yearbook to 2500 youth promoting environmental education activities.

*Provided 3 educational lessons related to environmental education

- *developed a direct mail piece and distributed to 5,000 youth explaining recycle, reuse, and reduce theory and announcement for Great America Cleanup Day.
- *Provided 3 radio, 3 newspaper articles on environmental education.
- *Promoted Great America Cleanup Day and 7 litter prevention workshops.
- *Conducted an oil recycling event
- *Promoted Household Hazzardous Waste Event
- * taught tree planting and the value of trees in our landscape to 402 4th graders.
- *Completed program on the effectiveness of planting wildlife food plots on wildlife habitat and distribute 1000 brochures on planting food plots.
- *Conducted 10 wildlife judging team training meetings
- *Conducted 4 land judging team training meetings
- *Made each 4-H activity a litter free event

IMPACT:

- *Oil recycling event included 26 families bringing 125 gallons of used motor oil; at Household Hazardous Waste Event only 136 lbs were collected, areduction of 2386 lbs from 2001. TDEC staff credited UTAES education on oil recycling during the year for the reduction.
- *1082 volunteers contributed 2705 volunteer hours toward environmental education.
- *9,340 lbs of liter was collected at Great America Clean-up
- *1200 lbs of clothing was collected; 5 miles of streets cleaned and 32 miles of county roads; 5 miles of the Elk River; 2 illegal dumps were removed.
- *Recycling projects collected 30 bags of aluminum and steel cans, 288 lbs of tires, and 150 bags of office paper.
- *5,000 flowers were planted; 1500 bulbs were planted; 402 trees were planted.
- *20 exhibitors presented to 200 people on clean water or water quality.
- *148 households brought 9,816 lbs of Household Hazzardous Waste
- *16 members completed wildlife judging training; Teams placed 1st, two 2nd, and 3rd in District and 6th in state.
- *9 members participated in land judging. One team placed 1st.
- *71% of members taught increased knowledge in litter prevention. 49% of members begin a recycling program.
- *53% gain knowledge in tree planting.

FUNDING: TDEC, C.L.E.A.N., Inc, Inter-Local Solid Waste Authority, Autozone, Tennessee Division of Forestry, and Blue Ribbon Horse Show Funds.

KEY THEME - INTEGRATED PEST MANAGEMENT

TITLE: Horticulture Education for Consumers

ISSUE: The University of Tennessee Master Gardener program in Hamilton County helps to expand extension's outreach while providing needed training and information to home gardeners. Communities benefit from Master Gardeners and their volunteer service.

WHAT HAS BEEN DONE:

- ⌞ A 15-week Master Gardener training course was held in the spring for potential volunteers.
- ⌞ Special emphasis was placed on an Integrated Pest Management (IPM) approach to pest control and the safe use of pesticides during the volunteer training.
- ⌞ The Master Gardener program is maintained by an active association which regularly meets to provide educational programs and leadership to volunteer activities.
- ⌞ A newsletter with educational information was produced monthly and mailed to volunteers.

IMPACT:

- ⌞ Forty-two students enrolled in the Master Gardener training course, completed the training, and enrolled in the Master Gardeners of Hamilton County Association.
- ⌞ A follow-up survey concerning IPM and Pesticide Safety was completed by participants of the training course. The survey revealed that since participating in this course, 100% - Read the pesticide label before use; 63% - Identify a pest before deciding on a management need; and 58% - Wear protective clothing when recommended on the label. Additionally, 74% of participants say they are using fewer pesticides around the home as a result of this program.
- ⌞ The Hamilton County Master Gardeners met on a regular basis and provided volunteer hours for 11 group service projects plus other individual projects. Volunteers reported over 3,000 service hours valued at \$48,150 (based on 2001 National Average of \$16.05). A sampling of projects include:
 - o The Beginner and Newcomer Gardening course was taught by volunteer instructors to over 50 homeowners new to gardening or new to Hamilton County.
 - o Master Gardeners gave more than 3,000 gardeners knowledgeable answers to their questions during the Hamilton County Fair.
 - o Master Gardeners answered questions, gave lectures, and distributed research-based information to more than 800 gardeners during the two-day Sertoma Lawn and Garden Show.
 - o Master Gardeners assisted the Hamilton County Recycling Center in their composting project by answering questions and distributing composting information to more than 200 gardeners.

- ⌞ A Master Gardener newsletter was published and mailed to 103 active Master Gardener volunteers monthly.

FUNDING: Extension Funds, Other (Class registration fees, newsletter subscriptions, donations from local businesses)

#

TITLE: Tennessee Cotton Integrated Plant and Pest Management (IPM)

ISSUE: According to the University of Tennessee research, the primary limiting factors to the approximate 113,869 acres of cotton in the six county area are soil fertility, insects, disease and weeds. When these economic limiting factors or pests reach an economic damaging level, they must be controlled in an efficient manner for cotton producers to maintain the highest economic return for their crop.

WHAT HAS BEEN DONE: A six county educational booklet and slide data have been used in the past and will be used again this year in the six county area, to the extent that time and available data permits, concerning insects, weeds, disease, soil fertility and other related IPM materials which concern plant and pest management programs in Dyer, Obion, Lake, Lauderdale, Weakley and Gibson counties. Weekly in-field training sessions and farm visits were used to educate producers, scouts and other private enterprise concerning the objectives of IPM programs so that yields could be maintained and/or increased in Dyer and Lauderdale counties where county IPM programs still function. Also, one family farmer in Dyer County outside of the county IPM program was worked with individually and taught IPM principles through in-field training sessions regarding some 1100 acres of cotton. One family farmer in Gibson County was worked with individually and taught IPM principles through in-field training sessions regarding some 400 acres of cotton. Lake, Gibson, Obion and Weakley counties cotton IPM programs have become privatized to the extent that most field and other types of educational correspondence is done on an as needed basis or by phone. Three (3) Western District scouting schools were made available for the six county area. Also, 2,508 Western District IPM newsletters were utilized in Dyer, Lake, Lauderdale and Gibson counties and made available to Obion and Weakley counties to keep producers informed regarding current plant and pest management problems and how to solve them efficiently and effectively. One hundred (100) news articles were used to show producers the benefits of following recommended IPM practices.

IMPACT: The cotton IPM program offers producers an educational scouting and management service which deals with primary yield limiting factors. Producers on the program receive a weekly comprehensive report regarding these pests and a weekly letter related to pest problems which are occurring and the correct recommendation to use to control these problems. U.T. and private monitoring programs which promote IPM principles pointed out to producers where boll weevil eradication was doing an adequate or inadequate job. According to the latest cotton producers survey and other available information, approximately 88% of all cotton producers in the six county area are using some degree of IPM practices which has resulted in pesticide reduction of 31%. This represents a total savings of approximately \$1,976,037.00 for cotton producers in Dyer, Obion, Lake, Gibson, Lauderdale and Weakley counties or \$19.72 per acre. Eight (8) cotton producers in Dyer, Lauderdale and Gibson counties enrolled approximately 2,574 acres in the U.T. Agricultural Extension Service cotton IPM program. Results from the Dyer and Lauderdale County IPM programs pointed out that 38% of the acres on the program needed at least one treatment of insecticide for bollworm-budworm pressure and 34% of the acres needed treatment for thrips. Additionally, 1% of the acres on the program reached

threshold levels due to plant bug populations. Soil sample results from the Dyer County IPM program showed that 60% of the fields on the program needed lime. No cotton fields monitored were in the low to medium range in phosphorus and potash. Also, IPM data from the Dyer and Lauderdale County IPM programs pointed out to producers that square retention averaged 93% from the third week of squaring until the first bloom growth stage of cotton. There were approximately 49,403 acres of cotton in the six county that were monitored by the private sector which the U.T. Agricultural Extension Service has had an educational impact on.

FUNDING: Restricted IPM funds through the University of Tennessee Agricultural Extension Service.

#

TITLE: Cotton Integrated Plant and Pest Management (IPM)

ISSUE: Cotton producers can increase their expected yields by effectively timing their pesticide applications for the control of pests such as insects, diseases, and weeds. Integrated plant and pest management (IPM) skills can be taught to cotton producers that wish to scout their own fields for pest. According to the latest cotton producer survey 88% of cotton producers use some degree of IPM practices. The results of these applied IPM practices is a 31% reduction in pesticide use and an approximate total savings and value of \$ 19.72 per acre.

WHAT HAS BEEN DONE: Following a farm plan with UT Ag Extension Service Area Farm Management Specialist one Gibson County farm family decided to get more involved with UT Extension programs. This Gibson County cotton farm family decided to learn the skills to effectively scout their own cotton for pest. IPM specialist Gene Miles and myself began working with the wife of this family who was to be the primary cotton scout. On a weekly basis, beginning with scouting for thrips and throughout the growing season until cotton cut out, Gene and I met and scouted cotton with this producer to help her gain the IPM skills needed for the different pests encountered throughout the growing season. She learned how to identify and locate the target pests for the given stages of cotton growth and development. She learned the proper techniques for such things as how to use a beat sheet to count both pest and beneficial insects. She learned how to determine if a field had reached an economic threshold for each pest and she made the decisions concerning pesticide applications based on the IPM measures. She also learned to monitor cotton growth rates and how to decide when to apply a plant growth regulator for the control of excessive growth.

IMPACT: After following the progression of this growers cotton crop it was apparent that an excellent job was being done based on the low level of pest damage being found in their fields. On a weekly basis she would monitor 400 acres of their own cotton. Pests infestations and damage levels were assessed and the rules of IPM applied. Area IPM Specialist Gene Miles estimates conservatively an \$ 8000.00 benefit, over the 400 acres scouted. The value of IPM was attained by reducing losses from pests and dollars saved by reducing pesticide applications.

FUNDING: Restricted IPM funds through the University of Tennessee Agriculture Extension Service.

KEY THEME - PESTICIDE APPLICATION

TITLE: Private Pesticide Applicator (PPA) Certification and Worker Protection Standards (WPS)

ISSUE: Tennessee Department of Agriculture (TDA) is responsible for the PPA and WPS certification programs in the state. The UT Ag Extension Service is responsible for promoting and administrating PPA and WPS training. Current TDA PPA certifications expired October 21, 2002. Anyone wishing to purchase, use or supervise restricted use pesticides must recertify before October 21, 2002 or go through PPA certification prior to future use of restricted use pesticides. According to state and federal laws, anyone using restricted use pesticides must follow WPS and comply with federal record keeping requirements.

WHAT HAS BEEN DONE: TDA person Paul Spain was consulted as to how best to provide PPA and WPS in Gibson County. We planned two sessions in March 2002 to be at the beginning of the cropping season to inform producers about WPS requirements and provide training and certification in WPS. An additional 22 training sessions were advertized and provided in Gibson County to train and certify people in PPA. Both Gibson County UT Ag Extension producer mail lists and TDA mail lists were used to identify current card holders and potential new PPA and WPS certifications. Flyers were posted at agribusinesses and agribusinesses publicized training dates and times. Those receiving certification in PPA receive WPS info. and are automatically WPS trained as this information is included in PPA training. I provided training in WPS for H2A workers in both Gibson and Obion Counties to assist area fruit growers. These training were conducted using EPA approved Spanish training tapes with the assistance of Spanish interpreters.

IMPACT: Paul Spain, with TDA assisted with the two WPS training sessions provided to Gibson County Producers held in March. Only 10 people received training in WPS at these sessions. Most producers have made the decision to have their employee's, that handle or come in contact with pesticides, receive PPA training and certification. A total of 38 H2A workers received WPS training and certification in Gibson and Obion Counties. Additionally, 207 Gibson County people have been re-certified in PPA prior to October 21, 2002. 50 people have gone through initial certification. Currently, 305 Gibson County residents have been certified in WPS and PPA.

#

TITLE: Mass Media Education In Consumer Horticulture - "From the Ground Up" Series on WBIR Channel 10

ISSUE: The University of Tennessee Agricultural Extension Service has a wealth of information for the horticultural consumer. The educational information is all research-based and is free to all residents. Since home gardening is the most popular hobby in the United States, it makes sense to merge television and this information as a means to educate gardeners and market The University of Tennessee Agricultural Extension Service.

WHAT HAS BEEN DONE: During the past year, I have appeared 148 times teaching and presenting helpful information to the home horticultural consumer. The program, "From the Ground Up," is a series which airs three times a week on WBIR Channel 10 Thursday Morning and Wednesday and Friday on Live at Five. The topics include timely tips, horticultural and agricultural issues, solid waste management, home improvement, and landscaping. We have started a website that is titled "Ask Neal". I have received several hundred e-mails since January 2001. I put together a series of 10 shows on both fescue lawn care and pesticide safety this year.

IMPACT: The show is seen every week by more than 200,000 viewers. I receive, on average, thirty telephone calls and twenty-five e-mails on the "Ask Neal" site each week asking questions about topics aired on the show. The program has developed quite a following. For instance, I have had ten speaking engagements which came directly from groups or individuals seeing me on the air. I try to use locally grown or produced materials for the show whenever possible. The success of the show has been measured through viewership as well as the increased sales of products and plants I have highlighted on the show. For instance, after highlighting some new varieties of poinsettias for Stanley's greenhouse they completely sold out in four days of one of the more unusual varieties and stated they had twenty people come in the next day that specifically saw me on the air.

FUNDING: Regular Extension Funds.

#

TITLE: Solid Waste Programming

ISSUE: For many years it has been recognized that without removing compostable materials from the waste stream, landfill waste could not be effectively reduced. These materials include brush, leaves, grass clippings, some types of food waste, and certain paper products. Understanding this fact has led Knox County to build two facilities to accept some of these materials; the Solway facility and the Forks of the River facility.

WHAT HAS BEEN DONE:

During the new contract year of 2002

I helped pick the new contractor, Natural Resource Recovery Incorporated, and acted as an advisor to them as they they took over the contract.

I have used my television spots to discuss the services offered at these sites.

I have help transition to a temporary contractor and then a permanent contractor.

I help write a new RFP.

I have worked with the Knox County Division of Solid Waste and Knoxville Utilities Board on a Biosolids and Grease Composting Program. We took all of the by-products produced during their waste water treatment process and composted them with yard waste. Over a six-weeks study, we discovered all the products were very compostable and met all EPA requirements for finished compost.

IMPACTS: The sites at Solway and Forks of the River are both operational and taking brush and yardwaste at a minimal fee. They diverted some 8,500 tons of compostable products from the landfill. Knoxville Utilities Board and First Utility District are both seriously considering the composting of some, if not all, of their bio-solids after we proved that it can be done more efficiently and less costly.

FUNDING: Regular Extension Funds and Knox County Solid Waste.

#

TITLE: Environmentally Sound Pesticide and Herbicide Use

ISSUE: All Agricultural Private Applicators of restricted pesticides and herbicides was to become re-certified in the year 2002.

WHAT HAS BEEN DONE: This year (2002) we held 18 meetings for chemical certification and/or re-certification.

IMPACT: There was a total of 98 producers re-certified and 28 certified. They were given a pretest and posttest with an average score of 65 and 90 points respectively.

FUNDING SOURCE: Extension Funds

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TITLE: Integrated Vegetation Management Training for Tennessee Department of Transportation

ISSUE: The Tennessee Department of Transportation must every year provide update training to their vegetation management staff. This training must focus on cost-effective and environmentally safe integrated vegetation management. Prior to 2002 TDOT employees must travel two to three hundred miles or even out of state training in order to retain certification status. One person for two days could cost the state over \$300 per year.

WHAT HAS BEEN DONE/IMPACT: In 2002 the specialist trained 160 DOT employees @ \$300/person times 160 employees equals to 48000 dollars in savings to Tennessee Department of Transportation. In addition, each received six recertification points. In 2002 a hands-on training

was also provided on the TSU Cheatham County Farm for Vegetation Management Applicators. Approximately 65 people attended this training. Applicators from TDOT, Nashville Gas, Nashville Electric, Chemical Companies and County Agents were trained again on environmentally safe management practices at a cost saving of \$150 per person, which equates to ten thousand dollars total. In addition, each person received six re-certification points.

Funding: TSU Cooperative Extension Program

#

TITLE: Pesticide Safety

ISSUE: Facilities Maintenance Training Metropolitan Nashville Airport for pesticide safety and environmental education.

Over the last fifteen years the facilities management of the metropolitan airport struggled to maintain the runways and over 2,500 acres of grass around the airport. The cost of paying consultants and the results were not beneficial and cost effective. Then came the September 11, 2001 crisis. This event brought greater demand on maintenance but with a reduced budget.

WHAT HAS BEEN DONE: The specialist (Roy Bullock) was highly recommended to the airport management to assist with cost effective and environmentally safe Vegetation Management Practices. In summer of 2001 a meeting was held with the airport management. An integrated vegetation management program was set up with collaboration from various companies.

IMPACT: In August 2002 the airport management responded in a letter.

“On behalf of the Facilities Maintenance Department, I would like to thank you for your priceless help. You have visited us only a few times, and a very good program to beautify our grounds is well underway.

Your expertise, at no cost to us, has also saved us a tremendous amount of money. For the past three years we paid a consultant for these services, and most of his advice was not helpful.

Our fence spraying has worked better than it has in the fourteen years I’ve been here. To some people that may not sound like a lot, but when there are thirty miles plus of fence, it is a lot to us. We have also spot-sprayed rock banks and cracks in asphalt and concrete that total more than twenty acres. Not having to re-spray these areas as in the past, has saved us at least two-hundred man hours and a considerable amount of money in supplies.

Once again, thank you for all of your help, and we look forward to our continued working together.”

Funding Source: TSU Cooperative Extension Program

KEY THEME - NATURAL RESOURCES MANAGEMENT

TITLE: National Web-Based Learning Center

ISSUE: The University of Tennessee was selected by the United States Department of Agriculture Cooperative State Research, Education, and Extension Service to develop the National Web-Based Learning Center for Nonfederal Forest and Range Lands. The Center will provide a centrally managed and organized Internet resource for nonfederal landowners, managers, and other interested persons to access accurate information concerning the management of natural resources such as wildlife, forest, and range resources. This Internet resource was needed to organize and fill-in existing web-based resources. Internet access to natural resource management information by landowners and managers will allow this Extension program to present information in a cost-effective manner to a large, nationwide audience.

WHAT HAS BEEN DONE: Since August 2002, the University of Tennessee has hired a Coordinator for the Center, who is housed on campus. A National Advisory Board has been selected and includes 17 people from around the nation. The Advisory Board has authorized and the Coordinator has begun conducting the first round of content development. Thus far, 44 preproposals have been submitted for review. Grant requests total \$542,346.58 and were submitted by 77 individuals from 32 institutions. These preproposals will be evaluated and some selected for funding.

IMPACT: Over \$90,000 has been allocated for content development for funding projects in each region of the United States and the 1890 programs. Preproposals for content development have come from at least 26 states and 100 different natural resource professionals.

FUNDING: The USDA CSREES has provided complete funding for this project, \$180,000.

#

TITLE: Natural Resources and the Environment

ISSUE: Tennessee is experiencing rapid growth and environmental changes which can dramatically affect the accessibility and quality of natural resources. It is the youth of today who will be most impacted by a change in the quality or abundance of Tennessee's natural resources. To make informed decisions, Tennessee youth who will become the leaders of the future, must understand the interconnectedness between human and natural resources. Opportunities for exploration, education, evaluation and application must be provided to these future earth stewards.

WHAT HAS BEEN DONE: Natural Resources and the Environment is a Tennessee 4-H Priority Program. Opportunities for youth and adults to explore their environment, examine the interconnectedness of human and natural resources, develop outdoor classrooms, apply the knowledge they have gained, improve the environment and address environmental issues have been provided. Educational efforts include school year programs at 4-H Centers, camps and conferences, outdoor learning laboratories, judging teams, service learning projects and classroom programs.

IMPACT: Inservice training in water quality issues for youth was held in 2 districts. Results from the water quality training show that all areas of the training were rated 4.1 or above on a 5 point scale with an average score of 4.4 in terms of usefulness of the information presented for all grade levels as well as knowledge gained, quality of presentation and content. Project WET was also conducted in the Smoky Mountain District with an average training score of 4.78 in the areas mentioned above. In addition, an outdoor classroom inservice was held for the elementary and middle school teachers in Sequatchie County prior to the beginning of school. Follow-up surveys from the outdoor classroom inservice show that each grade level at the school has adopted an outdoor classroom project to implement in their school during the current school year.

In 2002, 4094 youth participated in school year environmental education programs at the W. P. Ridley, Clyde York, Clyde Austin, and Buford Ellington 4-H Centers. Evaluations from the environmental programs show that as a result of participation, teachers and students reduced, reused and recycled; planted trees, shrubs, flowers and gardens; enhanced wildlife habitat, incorporated educational activities into classroom curriculum; and presented community programs. Comments from participating teachers illustrate the impact of the programming emphasis:

...the students has many learning opportunities and got to participate in a variety of activities.

I was able to observe students learning and cooperating where we had never seen it before.

Instructors were wonderful. I appreciate the positive influence in the character of our children.

Nearly 6,000 youth in grades 4-6 participated in Junior 4-H Camp which featured an International Wonders curriculum. The theme focused on participants becoming aware of differences and similarities among the Earth's people, experiencing new foods and customs and exploring common bonds. Understanding and an appreciation for worldwide resources is a vital component of the curriculum. Evaluations show that more than 80% of the participants rated the educational project sessions and special programs as excellent or good.

A summer camp staff member at each of the four 4-H Centers, provided additional natural resource and wildlife activities for more than 6500 Junior and Junior High Campers.

The annual week long Wildlife Conference was attended by 165 Junior High youth and 32

leaders. Average pre and post -test comparison scores represented an increase in knowledge of more than 50% percent.

The Wildlife Judging Contest included 4 district contests and 1 state event. Youth involved in this event included 143 4-H'ers. Sumner County, the Senior High State winner also placed in the national contest.

Senior High 4-H'ers are encouraged to complete service learning projects as a requirement for All Star membership. These youth and other younger 4-H'ers assisted in the development of the Cumberland Trail, and a multitude of projects ranging from recycling to site beautification and habitat enhancement. Statewide, 14,777 youth and 787 adults donated 52,816 hours in serving 158,001 community members through 175 different environmental service projects in the Seeds of Service grant initiative. The value of these projects is estimated at \$72, 410.

FUNDING: Environmental education programs at the 4-H Centers are supplemented by more than \$25,000 in grants and gifts. Wildlife Conference is entirely funded by the Tennessee Wildlife Resources Agency with program support from several cooperating agencies and organizations. In addition, many county 4-H organizations receive local community support in terms of materials and labor for community enhancement and other projects. Seeds of Service provided 10 grants to 8 counties in the amount of \$10, 410. for natural resources and environmental projects.

#

TITLE: Managing Native Grasslands for Sustainable Wildlife Populations

ISSUE: Native grasslands represent one of the most endangered ecosystems in North America. Wildlife associated with native grasslands as a result are threatened by this habitat loss. Species of economic importance, such as the northern bobwhite, have experienced significant population declines over the past 30 years. Developing proactive management strategies for these species is desirable at this time before these species become threatened or endangered and management options become more limited.

WHAT HAS BEEN DONE: We have developed a research project at Fort Campbell Military Reservation in Tennessee and Kentucky to evaluate how well grassland birds are doing in areas where habitat has remained largely intact over the 60 years since the military has managed this landscape. Research results indicate that wildlife populations are being sustained on Fort Campbell in spite of widespread declines elsewhere in the region. These results suggest that the population declines of grassland birds, such as the northern bobwhite, would best be addressed by landscape scale changes in land management practices. Small-scale habitat management aimed at individual landowners are not likely to be successful without consideration of the landscape context.

IMPACT: Public and private land managers and landowners interested in wildlife management for grassland wildlife species, such as northern bobwhite, will benefit from the knowledge gained in this study. This study provides landowners with a strategy for sustaining wildlife on their lands and it focuses attention on landscape context and the provision of native grasslands as important considerations for management success.

FUNDING: McIntire-Stennis Cooperative Forestry, Other CSREES (University of Tennessee Agricultural Experiment Station), Other (Department of Defense Legacy Program; U.S. Army-Fort Campbell)

#

TITLE : Agriculture and Natural Resources Improvement

ISSUE: Jefferson County 4-H presented researched based, educational opportunities to 1,620 4-H members once a month for seven (7) months in all ten (10) county schools in 57 classrooms grades 4th -12th.

According to the 2001 Tennessee Agriculture the 1997 Census of Agriculture and the 1992 Census of Agriculture, the county profile and situation for Jefferson County, TN is:
Total land in farms in Jefferson County has decreased 10 percent since 1987.
Total acreage of farmland in Jefferson County has decreased a total of 11,525 acres since 1987.
Average farm size has increased 5.88 percent since 1992.
Market value of all farm products increased 23.58 percent from \$15,298,000 in 1992 to \$20,019,000 in 1997.

According to the University of Tennessee Department of Wildlife and Fisheries Science and the Tennessee Wildlife Resources Agency, the amount of wildlife habitat acres is declining rapidly due to urbanization, increased population, lack of proper land owner management practices, and increased pollution in water systems. Suitable habitat is being replaced by sub-divisions and shopping malls.

IMPACT: 4-H members participated in the Jefferson County 4-H Agriculture and Natural Resource program concentration increased their knowledge, attitude, skills and aspirations related to agricultural and natural resources, wildlife and water quality educational programs, management practices, safety related issues, ethics, and responsibility.

4-H members and 4-H adult volunteers who participate in local, county, district and state livestock and horse events increased their knowledge, attitude and skills related to the production, ethics, showmanship, herd health, and management of livestock and horse species.

21 Jr. High/Sr. High 4-H members increased their knowledge and skills in decision making/problem solving skills, oral and written communication skills, build self-confidence, and increase evaluation skills through participation on 4-H judging teams.

67 Jr. High 4-H members increased their knowledge and attitude and make a social and environmental practice change as result of the Project WET educational lesson on Sum of Parts

160 Jr. High 4-H members increased their knowledge and attitude and make a social and environmental practice change as result of the Project WET educational lesson on Reaching Your Limits.

10 acres of land were socially, economically and environmentally converted and planted into wildlife habitat through 4-H members participation in the 4-H F.A.C.E. Wildlife Plot demonstration and plot contest.

Eleven (11) 4-H Adult Volunteers increased and gained knowledge, enhanced and provided leadership skills, increased oral and written communication skills, conducted educational programs through 4-H judging team and project group opportunities.

FUNDING: Extension

KEY THEME - FOREST RESOURCES MANAGEMENT

TITLE: Pine Loss Recovery For Private Landowners

ISSUE: Over 70 percent of the land area in Morgan County is in forests--with 13 percent of the total forested area being pine (Yellow pine, White pine). A Southern Pine Beetle infestation over the past 3 to 4 years has killed practically all of the pine. The state/federal government has \$3,000,000 available for cost share for helping land-owners re-forest pine beetle killed areas. Additionally, many landowners had questions about writing pine beetle losses off of their taxes--as a casualty loss.

WHAT HAS BEEN DONE: Extension networked with other agencies and planned and executed a multi-componet program for educating landowners on how to re-forest Southern Pine Beetle killed areas, cost share programs available and how to prepare and handle casualty losses in the future. An Extension sponsored mass media blitz--15 radio programs and 6 news articles in a weekly news column were used to spread the word about the new cost-share program and the need to "set-up the books" to claim losses from beetles, ice storms, etc. A one page fact sheet was also developed and distributed through the Extension Office. In November 2002--and educational program introduced the Southern Pine Beetle Program. Twenty-seven (27) landowners attended. In March 2002, 28 landowners participated in an educational program on "Options for dealing with the Southern Pine Beetle Killed Areas." In June 2002, a timber tax workshop was held in the county with 30 attending. In addition to the educational programs--office visits, on-site visits were used extensively to distribute information about the cost-share program, how to get started with re-forestation of pine beetle killed areas and the

need to establish a basis on timber.

IMPACT: A follow-up survey of the two educational programs held in 2002 revealed the following:

Options for dealing with Southern Pine Beetle Killed Areas.....

-100 percent of those participating in the educational program were aware that a new cost-share program was available for re-forestation.

-80 percent of the participants surveyed were either participating in the new-cost share program or were considering participating.

-60 percent of those participating increased their knowledge of 3 specific re-forestation site preparation management practices.

--80 percent indicated that their knowledge increased quite a bit by participating in the program.

Timber Tax Workshop

-knowledge level about 8 specific timber tax subject areas increased by 19.2 percent in those participants surveyed by random sample.

-50 percent of those surveyed indicated that they would be interested in learning more by participating in a day long tax workshop in the future.

Other

-45 landowners visited the Extension Office to obtain more information about cost-share program.

-25 landowners contacted Extension Office for information on how to write beetle damage off on taxes.

-50 referrals to both area and consulting foresters.

FUNDING: Extension Service Funds, County Forestry Association Funds, Forest Industry Sponsorship.

#

TITLE: Master Gardener/Urban Forestry Educational Programs/Volunteer Leader Development/Environmental Stewardship/Beautification

ISSUE: Hamblen County is becoming an urbanized community with many people living on small lots in subdivisions or on "mini-farms" with small acreages of land. Morristown/Hamblen County has a very active Keep America Beautiful system which stresses environmental stewardship/awareness and beautification by adding landscaping, flowers, etc. The City of Morristown recently started a tree board and for the first time adopted minimum landscaping requirements for new construction projects. People are very interested in these topics in Hamblen County.

WHAT HAS BEEN DONE: Master gardener sessions were conducted in April/May with six

participants. These six plus five that had been previously trained (total of eleven) formed a group and held three bi-monthly educational sessions plus a community service project of keeping up the grounds at ALPS (Alzheimers Lakeway Patient Center).

Assisted Morristown Tree Board with training sessions for members and provided UT forestry publications for hand outs to participants at the East TN Ag and Community Expo on September 20 and 21.

Conducted five three hour long sessions to recertify 125 farmers for private pesticide applicator cards.

Conducted three sessions at local home improvement store emphasizing soil testing and its importance.

Answered numerous phone calls and made numerous home visits for lawn, tree, shrub and garden consultations.

IMPACT: Master gardeners donated at least 75 hours of time in Community Service projects. At \$6 per hour this is worth almost \$500 in donated time. Much more was not "officially documented."

All master gardeners indicated that they saved at least \$50 per year by the knowledge gained during the courses. This is a documented savings of \$550.

People attending master gardener session gained knowledge and skills in areas covered and saved money by putting the information in practice at their homes.

Morristown Tree Board members and Keep America Beautiful board members gained knowledge and skills by attending educational sessions.

At least one tree valued at \$7,500 was saved by consultations with UT forestry specialists.

FUNDING SOURCE: Regular Extension funds.

#

TITLE: Teacher Conservation Workshops

ISSUE: K-12 teachers desire further training and hands-on, current information about forest biology, ecology and management. Participants learn by demonstration and practical exercises (field trips) how current forest conservation practices can be integrated into classroom work and student projects.

WHAT HAS BEEN DONE: One week workshop for K-12 teachers was held in Jackson and

Knoxville, TN during the summer of 2002. Content of the workshop includes outdoor laboratories, visits to forest industries and training in Project Learning Tree module. UT Extension and Experiment Station personnel, with the cooperation of the Tennessee Forestry Association and forest industry, provided leadership and training for the workshop. Workshop offered for college credit or inservice credit.

IMPACT: 35 teachers representing 1,260 contact hours of instruction attended the workshop. These teachers will use information gained from the workshop in their classes with an average of 200 students per year, representing 7,000 students. Teachers spend one week away from home during the summer to attend the workshop with the room and board on a college campus provided free of charge by the financial sponsors. Evaluations of the workshop by participants have consistently averaged between 4.8 and 4.9 on a 5.0 point scale.

Funding Sources: Extension, Tennessee Forestry Association, Memphis Lumberman's Foundation, Appalachian Hardwood Manufacturers Assoc. and TN Sustainable Forestry Initiative

#

TITLE: Tennessee Master Logger Program (TMLP)

ISSUE: Best Management Practices (BMPs) should be implemented on logging operations to protect water quality using a non-regulatory program.

WHAT HAS BEEN DONE: During calendar year 2002:

1. 7 workshops of 5 days each consisting of 40 hours of instruction per participant were held
2. 15 continuing education classes of one day each were held
3. Funding was secured for a research project to establish a statistically sound, experimental design for a study to evaluate BMP implementation rates and effectiveness in Tennessee.

IMPACT: The program graduated 93 loggers (3,720 contact hours of training) impacting an estimated 25,000 acres of forest land consisting of 75 million board feet of timber harvested with a value of \$11 million to landowners. The continuing education program with 15 classes (8 hours of instruction per class) had 404 participants and 3,232 contact hours.

Results from the research study conducted by UT indicate that there was a substantial association between BMP implementation and logger training, i.e., those loggers who received training from the TMLP were more likely to implement BMPs during logging operations than those loggers who were not trained. Thus, the TMLP has contributed to improved implementation of BMPs by loggers in Tennessee.

FUNDING: Extension

#

TITLE: Master Logger Course: Forestry

ISSUE: Over 90 independent individuals operate as loggers in Overton County and an estimated five times this many work in surrounding counties. A Master Logger Course has never been offered to loggers in this part of the state since its inception a few years ago. The course certifies loggers with a degree in the program that if adopted, would greatly increase their knowledge and skills in operating a successful operation while being environmentally friendly.

Representative John M. Windle suggested that if at all possible, that the Division of Forestry and Extension work cooperatively in providing this program to Overton and surrounding counties. Water and soil pollution, bad log roads, forestry's safety record, high grading are some of the problems faced not only by loggers, but also by land owners.

WHAT HAS BEEN DONE: For the second year in a row, the Tennessee Department of Agriculture's Division of Forestry in this county along with the Overton County Extension Agent utilized the following educational program to assist loggers and land owners in increasing their knowledge and skills in starting the second ever Master Logger Course in this area. A meeting was held to plan, carry out and evaluate a multi-county program with Overton and all surrounding county loggers. Mass media was used to advertize the program along with PSA's on the radio, a newsletter to all mills in the area, and contact with county Extension Offices. A sign up was started with registration mandatory to determine interest. The program was set up for five day long sessions using the Tennessee Forestry Association as the lead. Subjects included Safety, BMP's, Business Mangement, Silviculture, CPR and First Aid, Computers with records. five dates were selected being weekly on the same day, Friday. Other agencies assisting were TOSHA, Local Ambulance Service and Hospital, UT Forestry Specialist Wayne Clatterback, local attorney John M. Windle, and local banks, accountants, and insurance agents. Also local Area Farm Management Agent James Jones was use to teach about computers and record keeping. Other guidelines were used as set up by the TFA. Two meetings were held to organize a county forestry association with Jackson, Clay and Pickett Counties.

IMPACT: A state record was set for the most class applicants at 84 ever in two Master Logger Courses. Because of this program 84 loggers and land owners increase knowledge and skills in BMP's such as environmental practices, log road construction, tree tops in creeks and rivers. They also learn state guidelines and laws, how to buy and use computers in their operation, better business management, along with how to practice safety in their operations. They learned to appreciate forest management and how it impacts the future of the timber industry. The Division of Forestry estimates that many millions of dollars will be saved by the increase in value of standing timber through better tree selection alone and not high grading. The multi-county Forestry Assoc. will benefit all loggers, land owners in this area.

FUNDING: Extension Funds, A \$100.00 sign up fee, sponsors such as Rep. John M. Windle.

#

TITLE: Forestry & Forest Products

ISSUE: Income from the sale of timber in Hickman County in 1999, totaled \$5,965,000, according to the USDA Forest Service. There are 318,000 acres of timberland in Hickman County according to the 1997 USDA Forest Service Statistics Booklet. Of this amount of land, 231,000 acres are owned by farmers and individuals. Increased benefits from woodlands can be realized if landowners are provided information that gives an appreciation of the value and diversity of forests and the benefits that will result from their wise management and use. The main purpose of the forestry educational program is to provide landowners the tools they need in order to be more aware of the value of their timberland and how to secure this value. The educational program also incorporated a youth component to help them understand the forest industry.

WHAT HAS BEEN DONE: Timber sale packets were developed by Forestry Specialists giving landowners a quick list of "what-to-do" before they begin the process of selling timber. Timber tax workshops were held in Columbia and Centerville to educate landowners about the tax laws and how they can be used by forest landowners. An area field day focusing on hardwood management, pine management, BMP's, wildlife enterprises for landowners and a discussion of the new farm bill was held for landowners in the Upper Cumberland Area of Middle Tennessee. An educational workshop was held for 4-H members and the area food plot winners were announced at this event. Agent continues to work with the newly formed forestry association and the group meets quarterly to keep members informed on forestry issues. Agent developed a series of news articles published in the local paper informing the general public on forestry matters. Agent works with area cluster agents to develop programming for landowners in these counties.

IMPACT:

- Over 60 people participated in the Area Forestry Field Day. Evaluations (pre-post survey; knowledge level rated 1 - 5; 1 low level, 5 very high level) from the day showed an increased level of knowledge in the following areas: Hardwood Pre-Harvest - 39.0% increase; Hardwood Post-Harvest - 40.8% increase; Wildlife Enterprises - 55.6% increase; Pine Hazard Rating - 48.0% increase; Forest/Wildlife Management Plan - 50.3% increase; BMP's - 52.5% increase.
- One county landowner using a consultant to sell his timber, realized a \$20,000 difference in the bids offered on his timber. He made the sale to the high bidder and they are currently cutting his timber. He has been pleased with the process.
- Agent continues to work with county forestry association. They meet quarterly and discuss current issues on forestry matters. They have assisted with county tax workshop, conducted a tour of a local pallet mill and its operation, participated in Lewis County forestry field day and assisted with the area field day listed above.
- The county forestry association's officers serve as a program planning partner with Extension.
- News articles have been used to inform association members and general public about forest issues.
- In agent's visits with participants in the tax workshops, landowners gained knowledge on facts

that will save (did save) them money on their tax returns. Participants gained knowledge on taxes and felt more comfortable talking with their individual tax preparer. Participants also indicated that they were more knowledgeable and are now able to ask more/better questions to their tax preparer concerning their timber land and/or timber sales.

-County and area food plot contests were conducted and plots evaluated by area Extension Agents. Food plots are very important to the bobwhite quail population. According to the USFWS Breeding Bird Survey, 1966 - 2000, the quail population has declined approximately 75%. In Tennessee, the trend is -6% per year from 1982 - 1999. The food plots have a direct (positive) affect on the quail population. These food plots are approximately 1/4 acre in size but have an impact on the adjacent 10 - 15 acres of land in increasing the quail population in that area.

FUNDING: Regular Extension Funding, Water Quality Grant was used for the area field day as well as other local sponsors.

#

TITLE: Forestry and Forest Products

ISSUE: Income from the Sale of timber in Montgomery County in 1999, totaled almost 9 million dollars according to the USDA forest Service. Total Forest land from the eight county cluster area of (Stewart, Houston Montgomery, Dickson, Cheatham, Robertson, Hickman, and Humphreys Counties) accounts for nearly 1.5 million acres. Total forest products and timber sales from the cluster area exceeds 36 million dollars. The main problem being addressed is that a large majority of landowners within this cluster group are not knowledgeable of the value of their timber and not aware of marketing options available to them. Landowner Education would include the use of timber consultants and Farm-Hunting leases. The educational program also incorporated a youth component to help them better understand the forest industry.

WHAT HAS BEEN DONE: Timber sale packets by Forestry Specialists giving landowners information about what they needed to do before they begin the process of selling timber. An area field day focusing on hardwood management, pine management, BMP's, wildlife enterprises for landowners and a discussion of the new farm bill was held for landowners in the Upper Cumberland Area of Middle Tennessee. An educational workshop was held for 4-H members and the area food plot winners were announced at this event. Agent continues to work with the county forestry association and the group meets quarterly to keep members informed on forestry issues. Agent writes weekly column for newspaper and informs the public on forestry issues. Agent works with area cluster agents to develop, implement, and evaluate programming for these counties.

IMPACT:

-Over 60 people participated in the Area forestry Field Day. Evaluations (pre - post survey; knowledge level rated 1 - 5; 1 low level, 5 very high level) from the day showed an increased

level of knowledge in the following areas: Hardwood Pre-Harvest-39% increase; Hardwood Post-Harvest-40.8% increase; Wildlife Enterprises - 55.6% increase; Pine Hazard Rating - 48.0% increase; Forest-Wildlife Management Plan - 50,3% increase; BMP's - 52.5% increase.

-Agent works with county forestry association. Meetings include the Tree-Farm system and a consultant presenting a program on timber management and marketing.

-The County Forestry Association also assist in with preparation and delivery of Fourth grade Re-Leaf program.

-The County Forestry Association officers serve as an advisory group in planning Forestry programs for Montgomery County.

-News Articles have been written to inform association members and the public about forest management issues.

FUNDING: Regular Extension Funding, Water Quality Grant was used for the area field day as well as other local sponsors.

#

TITLE: Stewart County Forest Improvement

ISSUE: Timber is the number one agriculture product in Tennessee. Stewart County has 213,300 acres of timberland, 62,600 of these acres are government owned, 55,000 acres are owned by Meade/Westvaco and 93,800 acres are owned by non-industrial private individuals or corporations. An assessment of Forestry in Stewart County determined that private forest landowners do not manage to improve their woodlots. Landowners sell timber without a contract.

WHAT HAS BEEN DONE: Three Forestry Educational Meetings stressing Forest Management and Marketing. 4 Forestry Newsletters, 20 farm visits, Forestry Field Day

IMPACTS:

Evaluations of educational programs determined that 6100 acres of private timberland were under a management plan.

12 landowners reported selling with a written contract.

Loggers reported 55% of timber purchased was contracted.

37 landowners increased their knowledge of Forestry and Forest Management from 70% to 90% on Forestry pre-test / post-test.

FUNDING: Extension

#

TITLE: Forestry and Wildlife

ISSUE: According to the 1997 forest statistics, McNairy County has 224,000 acres of timberland. Over 178,000 acres are privately owned. This gives landowners a tremendous opportunity to manage their timber and wildlife resources. The timber industry employs approximately 390 people in McNairy County, generating a total payroll of just over \$7 million. Approximately \$5.5 million worth of sawtimber is removed from McNairy County annually. Public concerns over road use, water quality, clear cutting, wildlife populations and overall timber harvesting and marketing have all been identified. Storm damaged trees and the addition of new subdivisions in forested areas have caused the need for more urban forestry programming in a traditional rural area. The McNairy County Forest Landowners Association has been formed to keep forest landowners educated and informed of potential forest related legislation. This group is made up of landowners with both large and small timber tracts, absentee landowners as well as minority landowners. With 80 paid members and other guests coming, attendance at meetings runs as high as 120. Paid membership is not a requirement to attend activities and all meetings are held in public buildings. This plan will address these issues in keeping with the state

initiatives: (1) improve profitability; (2) improve management of forest resources to understand the ecology of forest development and planning. Needs assessments are done annually by surveying landowners, asking them to identify topics related to wildlife and forestry that they feel are important to them and to the management of their land. Forestry topics most frequently identified include: hardwood management, marketing timber, regeneration methods, pine management and timber as an investment. Wildlife topics most frequently identified include: Wild Turkey management, small game management, developing lands for Waterfowl and White-tailed deer management.

WHAT HAS BEEN DONE: The McNairy County Forest Landowners Association is an active partner in conducting Extension programming related to wildlife and forestry. This local group has a stated purpose of making information available for landowners to manage their forest land. The McNairy County Forest Landowners Association is the largest county group in the State of Tennessee. Our group has a membership of over 130 landowners and events are regularly attended by nonmembers who want information on specific topics to be addressed during meetings. Spring and Fall meetings were heavily attended with multiple topics addressed at each meeting. Topics covered included: Forest Herbicides for Pine Release, Cost Share Opportunities in Forestry, Selecting Hardwood Sites, Timber Prices and Outlook, Proposed Forest Legislation on the State Level, Quality Deer Management, Multiple Wildlife Species Management and Developing Lease Hunting Opportunities.

In addition to utilizing the Forest Landowners Association, other teaching methods used to help landowners included newsletters, Extension publications, farm visits and other one-on-one contacts.

IMPACT: By using direct observations, follow-up interviews and an end of year survey after the Fall meeting, the following outcomes or impacts were observed:

* 100% of landowners interviewed and who were surveyed said they increased their knowledge

and skills related to timber and wildlife management relative to the management of their own land.

* 90% related that they feel they have increased the value of their land through better management of their natural resources.

* 90% said that they had implemented at least some BMPs on their land in the last year.

Approximately 35,000 acres of privately owned forest land is being actively managed for timber production and/or wildlife management. As a result of this management, more timber is being grown faster thus giving landowners a greater return on their timber land investment. Landowners who lease the hunting rights of their land to other people see hunting lease fees increasing to the \$10 per acre range as a result of implementing wildlife management practices on their land. Many landowners simply derive more enjoyment of their land by increasing the population of targeted species through specific management.

FUNDING: Regular Extension Funds

#

TITLE: Nontraditional Audiences

ISSUE: Carrying the message of the forestry and natural resource management to nontraditional audiences is an important undertaking. Members of this audience have traditionally been overlooked, yet their opinions and ideals often contribute to policy changes. Gaining their support is vital for the growers and processors of wood products.

WHAT HAS BEEN DONE: A forestry tour was organized for deaf children from Memphis and Jackson Schools. This served as a trial, to build support for successful future programs for other nontraditional audiences.

IMPACT: Donations were received and support garnered from private enterprises to attain success with the field day. The event was attended by 49 deaf students and teachers. An article highlighting the event was published in a national trade journal, The Forestry Source. Extension Specialist from other agricultural disciplines showed interest of expanding this program into their arena in the future. Children's lives were changed and respect for the forestry profession was heightened.

FUNDING: Funding for this event (totaling \$877) came from private enterprise.

#

TITLE: 4-H Forestry

ISSUE: Forestry education for Tennessee's youth

WHAT HAS BEEN DONE: These students learned about trees and forests and their role in the world and our society. They learned to identify trees, plant trees, to measure and manage trees/forests. These skills are fundamental in understanding our surroundings and making appropriate decisions regarding their use. 4-H Forestry programs also offer students knowledge of career opportunities in Forestry, Wildlife and Fisheries.

IMPACT: 4-H Forestry had a good year in 2002. Noteworthy accomplishments include 1) distribution of compact discs containing training materials for the 4-H Forestry Judging Contests.(This information was provided by the National 4-H Forestry Invitational Committee), 2) conducted a Forest Site Evaluation event at the State 4-H Forestry contest. This achieves long stated goal of conducting a team event that required a critical synthesis of the knowledge and skill presented in other aspects of the overall contest. The contest requires site and forest evaluations and the preparation of management suggestions for a hypothetical landowner. 3) participated in Knox Co. Arbor Day/Releaf program.

The project enrollment in forestry was 4799, with additional participation in Forestry judging (180), Wildlife conf. Forestry lecture (180) and 4-H Jr. High School (12) over 5000 young people participated in 4-H forestry, this year. Students generally seemed to enjoy and grow during their participation in 4-H Forestry activities. Anecdotal evidence and direct contact indicate improved knowledge and skills for most of the students. Many 4-H Forestry participants will ultimately own trees and perhaps own a forest these folks will have a different experience than those who never participated in a 4-H Forestry program.

FUNDING: This program is supported by Extension with additional support from donors through accounts with the 4-H Foundation.

#

TITLE: Forestry and Forest Products

ISSUE: Improper timber management, harvesting, marketing and poor utilization of by-products are causing considerable loss in potential agricultural income.

WHAT HAS BEEN DONE: Extension has worked directly with individuals and businesses, and met with other groups and organizations to explore additional possibilities for wood utilization. Extension specialists have also been used to provide additional resources and information. The agent is a member of the Trees to Jobs committee, Wood Industries Council and Forest Festival Committee which are working to recruit forestry related industries to the county for the purpose of increasing employment, better utilization of our wood products and by-products, and promotion of our forestry industry. Extension has presented facts and statistics to prospective businesses and industries to encourage their move to Hardeman County. The agent has worked with the U.T. Center for Industrial Services in setting up five demonstrations in the county to

utilize sawdust as a soil amendment for row crops, sod and horticulture. Two sawmills provided the sawdust and a trucking company provided the loading, hauling and spreading of the sawdust. The agent has presented statistical information on by-products to a potential ethanol producer and to a potential biodiesel producer. A County Forestry Landowners Association has been formed by the agent.

IMPACT: Hardeman County has approximately 247,000 acres of timberland and produced over 65,000,000 board feet of lumber in each of the last five years. Many individuals now have better understanding of the values of their timber and how to best market it. The Trees to Jobs Committee has presented and manned a display to promote Hardeman County and its opportunities at the Wood Products Conference and the Tennessee Forest Festival. This has promoted several industries to make inquiries and visit our county. The committee has utilized a \$5,000 Spirit Award from the U.S. Forestry Service and \$3,500 in county funding for display equipment and promotional materials for forestry promotions. The agent is working with a representative of the U.T. Center for Industrial Services on a grant to utilize some of our readily available by-products. A forestry landowners association has been formed and presently has over 70 members. The ethanol plant will utilize wood waste and eventually employ 50 people.

FUNDING: Local, County, Federal, Extension and U.T. Center for Industrial Service.

#

TITLE: Quality Lumber Initiative Gives High Return on Investment

ISSUE: The project results indicate real-time statistical process control is a low-cost, low-risk investment that may lead to target size reduction and substantial improvements in lumber recovery and lower manufacturing costs.

WHAT HAS BEEN DONE: The research focus of the Tennessee Quality Lumber Initiative (TQLI) is to examine the effect of real-time statistical process control (SPC) on lumber thickness variation and target sizes. The effect of thickness variation and target size reductions on log recovery, lumber quality and cost savings were also investigated. Case studies were conducted at two hardwood sawmills in the southeastern U.S. and a softwood sawmill in Oregon. The research program complements the research mission of the Tennessee Forest Products Center, which is to ensure the competitiveness of the forest products industry in Tennessee, the region and beyond.

Lumber Thickness Variation and Target Sizes - There was statistical evidence at the three case study sawmills that real-time SPC had an effect on target sizes. Improved awareness of real-time lumber thickness may have led to immediate reductions in target sizes at all three sawmills. Analyzing sources of thickness variation and reducing thickness variation resulted in long-term reductions in target sizes. One case study sawmill had a statistically significant long-term reduction in target sizes of approximately .120" for 4-quarter lumber. The other two sawmills

experienced statistically significant long-term reductions in target sizes of approximately .030” for 4-quarter lumber.

Lumber Recovery and Lumber Quality - Lumber recovery improved at all three case study sawmills. There was statistical evidence that lumber recovery increased from 0.2% to 1.6% at the three sawmills. One sawmill had a significant improvement in “Common and Better” lumber grade of 4%. Lumber grade improved from reductions in within-board thickness variation (*e.g., thin-edges*).

IMPACT: The three companies participating in our Quality Lumber Initiative averaged an investment per company of \$18,333, however, the average return was \$380,667. That’s a return on investment ratio of 21 to 1.

Accountants from the companies determined returns on investments from using UT technology ranged from 12:1 to 28:1. One company invested \$27,000 but the return on that investment was more than \$752,000.

FUNDING: McIntire-Stennis Cooperative Forestry

#

TITLE: Consumers’ Preferences and Willingness to Pay for Environmentally Labeled Hardwood Products

ISSUE: Consumer interest in the environment is increasing. One potential means for consumers to support environmentally sound management practices is through purchasing environmentally certified products.

WHAT HAS BEEN DONE: A survey of consumers in Tennessee and Pennsylvania was conducted. Measures of market participation and willingness to pay premiums for environmentally certified hardwood products were obtained.

IMPACT: Research showed that consumers are willing to pay premiums for hardwood products that have undergone a certification of the timber harvesting methods used in their production. A profile of the consumer most likely to be willing to pay more is an older female who is a frequent forest user and has contributed time or money to an environmental organization. Premiums on low cost products can exceed 10 percent.

Funding Sources: Hatch Act, Other (USDA Forest Service, WERC FastTrack Grants Program)

#

TITLE: Master Tree Farmer- Short Course, Statewide Results

ISSUE: Over 11 million acres, or 80% of forest land in Tennessee is owned by non-industrial private landowners. These landowners desire research-based information on how to practice sustainable forestry and how to manage their land to meet their objectives. Considering that nearly 200,000 people own 10 or more forested acres in Tennessee, the Extension Service was seeking a forestry short course that could be broadcast statewide through distance learning techniques.

WHAT HAS BEEN DONE: County Extension personnel in Wayne, Dickson, Madison and Humphreys counties coordinated workshops that 56 landowners attended in February and March of 2002. The 7 night, 3 hours per night forest landowner short course was broadcast live via satellite from Clemson University to 4 locations in Tennessee as part of a regional 10- state program. This advanced short course was based on previous courses in 2000 and 2001. Regional experts presented information in the following subjects: Managing the Forest Site, Silvicultural Prescriptions, Controlling Unwanted Vegetation, Forest Health and Forest Pest Management, Best Management Practices, Forest Measurements and Forest Products, and Advanced Wildlife Management Concepts.

The Master Tree Farmer satellite short course has been held three consecutive years in Tennessee with more than 300 landowners participating.

IMPACT (2002): Eighty percent of the 2002 participants also attended the Master Tree Farmer Course in 2000 and 2001. Thirty-five percent of the participants were absentee landowners, an untapped audience for natural resource Extension programs. Those in attendance own an estimated 8,000 acres of forest land. Participants were primarily college graduates, owned a home computer with internet access and would attend additional satellite short courses. Satellite, distance learning technology was an effective method to conduct a statewide forestry short course. Cost was less than \$6.00 per contact hour. Participants were enthusiastic about the short course and were eager for even more information. Follow-up surveys have been sent out to determine knowledge retention from the program and whether practices have been planned or implemented based on the information gained from the short course. An advanced wildlife program will be offered in 2003.

Funding Sources: Extension and regional grants

#

TITLE: Logging Better Implemented Through Program

ISSUE: Best Management Practices (BMPs) should be implemented on logging operations to protect water quality using a non-regulatory program.

WHAT HAS BEEN DONE: Seven 5-day workshops, each consisting of 40 hours of instruction and 15 one-day continuing education classes were held to educate loggers. Funding was secured

for a research project to establish a statistically sound, experimental design for a study to evaluate BMP implementation rates and effectiveness in Tennessee.

More than 1,800 participants have graduated from the 5-day program since 1993. To maintain Master Logger designation, participants must attend a one-day continuing education program every two years. The program is a partnership between TDA, Forestry Division, Tennessee Forestry Association and UT Agricultural Extension Service

IMPACT: The program graduated 93 loggers impacting an estimated 25,000 acres of forest land consisting of 75 million board feet of timber harvested with a value of \$11 million to landowners. The continuing education program with 15 classes (8 hours of instruction per class) had 404 participants and 3,232 contact hours.

Results from the research study conducted by UT indicate that there was a substantial association between BMP implementation and logger training, i.e., those loggers who received training from the TMLP were more likely to implement BMPs during logging operations than those loggers who were not trained. Thus, the TMLP has contributed to improved implementation of BMPs by loggers in Tennessee.

Funding Sources: Extension

#

TITLE: Small Woodlot Management

ISSUE: Small Woodland Management Education Program (Landownership Training)
Developing strategies for the education of underserved and limited resources farmers and woodland owners in Mid-South USA

Underserved forest landowners do not receive technical, financial or educational assistance from the federal, state and local agencies. These landowners generally have small-to-midsize holdings, and include minorities, females, absentee and other who have not taken advantage of available programs or services.

A recent preliminary study by the Department of Forestry at Mississippi State University have identified that there are several obstacles that prevent forest landowners from actively practicing sustainable forestry. These obstacles involve a lack of knowledge or understanding of: ownership, economic, environmental issues, and the availability of educational, financial and technical assistance.

WHAT HAS BEEN DONE: A study was initiated to develop strategies for the education of underserved and limited resources farmers and woodland owners in Tennessee. First, three focus group sessions were conducted with underserved landowners in Clarksville, (Montgomery County), Winchester (Franklin County) and Jackson (Madison County). Second, a mail survey

was sent to a random sample of landowners in thirty one counties. The mail list for the mail survey was developed from county tax rolls.

IMPACT: About forty landowners participated in these focus groups. A mail questionnaire was sent to 1,600 Tennessee non-industrial forest landowners. For spring 2003, a series of landowner workshops have been planned for Montgomery, Tipton and Shelby counties. The following topics will be presented in these workshops: landownership issues, environmental issues, marketing, the economics of forestry, and sources of assistance.

FUNDING: TSU- Cooperative Extension Program, University of Tennessee - Extension Services, and Mississippi State University - Extension Services

KEY THEME - WILDLIFE MANAGEMENT

TITLE: Quality Deer Management

ISSUE: The white-tailed deer is the most popular big game animal in Tennessee and the conterminous United States. Through restocking efforts and regulated hunting, white-tailed deer populations have rebounded from all-time lows in the early twentieth century to approximately 33 million animals today. A major reason for this success was a restriction on the doe harvest, allowing only bucks to be killed during the hunting season. This process was expedited in that the majority of deer predators (e.g., red wolves, gray wolves, mountain lions, bobcats, and black bears) had been extirpated from the majority of the whitetail's range. As deer populations became re-established, states began to allow limited antlerless hunts; however, in some regions, it was too little, too late. By the 1990s, deer populations had exceeded carrying capacity in many areas, especially in the South and Northeast. The continued restriction on doe harvest created skewed populations favoring does with few mature bucks in most places. In Tennessee, yearling (1½ years old) bucks have comprised 70-80% of the bucks harvested annually over the last 15 years. Overpopulated deer herds with unbalanced sex ratios have created many human/deer conflicts, including forest and crop depredation, increased deer-vehicle collisions, habitat destruction (negatively affecting many wildlife species), and unnatural changes in the timing of reproduction, altering behavior and reduced fawn survival.

WHAT HAS BEEN DONE: Four educational training seminars and workshops were given to 125 people, representing natural resource professionals, landowners, and students. The sessions concentrated on explaining deer population dynamics and the relationship of the deer herd with habitat conditions and the effect on other wildlife species. They were instructed how to improve the condition of the deer herd through non-traditional hunting regulations and habitat improvement. Over 1,000 Extension publications with this information was distributed.

Demonstration food plots were established to determine germination rates, deer preference, and resistance to browsing. Data collected from these plots were incorporated into two Extension

publications, reaching over 2,000 people.

Quality Deer Management (QDM) programs were implemented on seven areas and a research project was initiated on the Hobart Ames Plantation. Funding from outside sources has provided \$25,000 to support these projects. These programs are actively taking steps to improve the sex ratio and age structure of the herd. Additional work involves habitat improvement, either through establishing food plots or other habitat improvement practices, such as timber stand improvement and the use of prescribed fire in fields and woodlots.

IMPACT: A QDM, including population management and habitat management, was initiated on a 200-acre private estate in Blount County that had suffered extreme damage by deer browsing on ornamental shrubs and flowers. To date, hunters have killed 55 deer on the property and improved natural food resources for the deer herd by planting food plots, thinning forest stands, and using prescribed fire. Prior to initiation of the project, damage to ornamental plantings was in excess of \$10,000 annually; now, damage by deer is non-existent. The sex ratio of the herd has been improved from six does per buck to two does per buck, which improves reproductive fitness and timing of birth. A deer census on the area has shown the population has been reduced to the point where the available habitat is better able to support the herd. Other sites are showing similar trends. That is, reduced deer damage to crops and ornamental plantings, improved sex ratios and age structure among the animals in the herd, increased weights, and earlier birthing dates, which improve fitness and fawn survival.

FUNDING: UT Agricultural Extension Service, Hobart Ames Foundation, Quality Deer Management Association

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TITLE: Reducing Agricultural Production Losses to Deer

ISSUE: Concerns about agricultural damage caused by wildlife are growing, particularly damage caused by deer. Without intervention, increased conflicts between humans and deer will continue to directly affect the sustainability of agriculture. Remote sensing has the potential to improve the efficiency and objectivity of deer management programs, thereby reducing the occurrence of such conflicts. However, objective and efficient assessment of deer damage has not been fully utilized, and until factors affecting deer damage are understood, management of deer populations and land use to alleviate conflicts between deer and agriculture cannot be successful.

The white-tailed deer (*Odocoileus virginianus*) is the leading species of wildlife associated with this damage. Our long-term goal is to reduce deer damage to agriculture across the United States. The overall objective of current work is to refine remote sensing techniques to assess deer damage and habitat use objectively and efficiently, thereby adopting an improved, integrated approach to deer management. Our central hypothesis for current research is that a combination of remote sensing tools will provide accurate assessment of deer damage and habitat use and will

support the development of deer harvest policy and land use decisions.

WHAT HAS BEEN DONE: Researchers at the University of Tennessee have completed preliminary investigations concerning the application of remote sensing technology to deer management. Surrounding land use, habitat interspersion, and deer movement among habitats may affect feeding intensity in crop fields. Temporal changes in food availability, vegetation structure, and plant growth stage may also influence soybean use by deer. Fine-scale deer movements and use of surrounding habitat can only be determined with accurate animal locations. Therefore, we tracked 16 adult (less than 1 year old) does in an agricultural area (Chesapeake Farms, Chestertown, MD) using GPS tracking collars (*GPS-2000 Lotek Engineering*) in 2001 (n = 10) and 2002 (n = 6). Collars obtained locations every two hours throughout the soybean growing season. Using Geographic Information Systems (GIS) we developed multiple spatial and temporal variables for deer locations in soybean fields related to adjacent cover and food sources, edge characteristics, and crop growth stage. Significant variables will be used to develop a predictive model to identify crop fields at the greatest risk for deer damage.

Understanding how deer utilize agricultural landscapes on a small scale will facilitate integrated management of deer populations and surrounding habitats. Reducing deer density is the best way to attenuate deer damage; however, significant depredation losses can occur even at low densities. Farmers may be able to modify land use practices around cash crops to reduce the impact of deer. We expect this research will promote sound deer management, profitable agriculture and quality hunting opportunities.

IMPACT: White-tailed deer are an important component of our natural heritage, and provide many economic benefits through hunting and wildlife watching. Unfortunately, deer overabundance has caused many new management challenges. The research conducted by UT is significant because it prescribes powerful new approaches to quantify deer damage. These tools, when used for managing herds and making land use decisions, will reduce the economic impact of deer to America's farmers. Once accomplished, the project will allow efficient and objective measurement of deer damage. These measurements will then be used to manage deer populations and agricultural lands in a sustainable manner. The research being conducted is essential for sound deer and land management directed at sustainable and profitable farming operations.

FUNDING: Hatch Act

#

TITLE: Tennessee 4-H Wildlife Project

ISSUE: Educating youth about natural resources management is critical to the future of our environment. This is especially important given the challenges faced today with an ever-increasing urban society where fewer children have a connection with the land than ever before.

WHAT HAS BEEN DONE: The 4-H Junior High Wildlife Conference is a week-long camp offered each year that includes seven courses related to wildlife and natural resources management. The 4-H Wildlife Judging contest is offered at the district and state level and teaches youth how to evaluate and manage habitat for all types of wildlife. State winners are invited to the National Wildlife Habitat Evaluation Invitational. The Food And Cover Establishment (FACE) contest gives youth an opportunity to enhance wildlife habitat with the possibility of receiving a monetary award provided by the Tennessee Wildlife Resources Agency (TWRA). All youth enrolled in the TN 4-H Wildlife Project complete grade-level project work outlined in a series of workbooks offered at each grade level.

IMPACT: The Tennessee 4-H Wildlife Project teaches 4-HÆers the basic principles of wildlife ecology and management. The Tennessee 4-H Wildlife Project has increased from 12,694 in 1999 to 27,587 in 2001, making this 4-H project the second largest in Tennessee. Pre- and post-test scores of 320 youth who participated in the Jr. High Wildlife Conference in 2001 and 2002 showed an increase in knowledge of 48 percent concerning issues related to wildlife ecology and management. Wildlife Judging teams from Tennessee have learned the principles of habitat management and place 11th (1999), 7th (2000), 3rd (2001), and 2nd (2002) in the National Wildlife Habitat Evaluation Invitational. Approximately 2,400 Tennessee 4-HÆers have participated in the FACE Contest over the past 4 years, planting food plots and improving wildlife habitat over more than 36,000 acres.

FUNDING: Funding support for the Tennessee 4-H Wildlife Project has been provided through The University of Tennessee Agricultural Extension Service and through a grant funded by the Tennessee Wildlife Resources Agency, which has provided \$120,000 in the last 4 years.

#

TITLE: Youth Environment, Agriculture & Natural Resources

ISSUE: 4-H members show a strong interest in Wildlife and Environment related topics based on interest surveys. Our advisory committee also suggested that we offer a wider variety of 4-H programs including agriculture and environmental programs. Putnam County is quickly growing into a more urban area, with a shift from traditional agriculture to gardening and landscaping. Agents want to increase 4-H members' knowledge of agriculture and our food/fiber system and raise awareness of natural resources and environmental issues.

WHAT HAS BEEN DONE: Judging teams were offered to 4-H members in the areas of Wildlife, Land and Plant & Seed Identification, with teams competing on the district and state levels. Agent presented program entitled, Agriculture is More Than Food to 447 4-H members during monthly club meetings and Endangered Species Jeopardy was presented to 100 7th grade 4-H members during special interest sessions.

IMPACT:

>46 4-H members competed on Judging Teams at the district and state level in Wildlife, Land

and Plant & Seed ID.

>5 4-H members competed in recordbook competition at the state level in related project areas (garden, wildlife and home horticulture)

>33 demonstrations were given by 5th and 6th grade 4-H'ers in related areas

>70% of reported learning more about Agricultural Products after the program, Agriculture is More Than Food, when asked to match 10 products with their source, 4-H'ers got an average of 4 correct

>Following the activity, Endangered Species Jeopardy 50% fo 4-H'ers could correctly identify at least one species from the game and 85% reported learning more about endangered species from the game

FUNDING: Funding through regular Extension funds

#

TITLE: Restoring Elk to the Northern Cumberland Plateau Area of Tennessee

ISSUE: Historically, elk (*Cervus elaphus*) ranged throughout a large part of North America. As European settlers moved westward across the United States, many populations and even subspecies of elk became extirpated. Loss of habitat and unregulated hunting reduced elk numbers nationwide. The eastern elk (*C. e. Canadensis*), which ranged as far south as Louisiana, Mississippi, Alabama, and Georgia, became extinct.

Threatened by the fate of the eastern elk, western states began restoration efforts in the 1930s to reintroduce elk to unoccupied habitats. These elk were given protection, and populations thrived in the expansive habitat. Until recently, not much emphasis was placed on restoring elk to the eastern range they once inhabited. Since the date of extinction, the east has become more populated, with significant alterations to the landscape. However, many states have suitable habitat, large undeveloped ranges and public support for restoring native species. In eastern North America, elk restoration efforts are now being conducted in Arkansas, Kentucky, Michigan, Minnesota, Pennsylvania, Tennessee, Virginia, Wisconsin, and Ontario.

In 1999, citizens groups from the northern Cumberland Plateau region of Tennessee expressed their interest in restoring elk to the area. Tennessee Wildlife Resources Agency (TWRA) worked with these citizen stakeholders, developing a plan to restore elk to a 670,000-acre area. TWRA carefully identified the elk restoration zone as a region still suitable for elk. The restoration zone includes acreage in Campbell, Scott, Morgan, Claiborne, and Anderson counties of Tennessee. Research is critical to know how reintroduced elk will adapt to the social, biological and ecological conditions in Tennessee.

WHAT HAS BEEN DONE: Researchers at the University of Tennessee have been establishing movements, mortality, recruitment and habitat use of reintroduced elk in the Cumberland Plateau area of east Tennessee, adding to the knowledge base of elk ecology in eastern North America.

Tennessee Wildlife Resources Agency restored 136 elk to the upper Cumberland Plateau. All the animals originated from wild-trapped stock (*C. e. manitobensis*) within the enclosed area of Elk Island National Park located about 40 miles east of Edmonton, Alberta, Canada. All animals were fitted with telemetry collars or ear tags for monitoring after transportation to Tennessee. The first release consisted of 50 animals of various sex and age groups release on December 19, 2000. A second release of animals occurred on February 28, 2001 at the same site. This second release consisted of 36 animals, primarily young animals of both sexes and young spike bulls. An additional 50 animals were released February 14, 2002. These were considered hard releases, where animals were captured, transported, and released without a period of acclimation. All animals were tested prior to importation for diseases affecting native and domestic ungulates. A total of 22 animals were confirmed dead as of September 1, 2002. Two animals died in Kentucky. Thirteen of the animals were tested for chronic wasting disease and were negative. No communicable diseases have been identified during necropsies. Annual survival measured by Kaplan-Meier analysis did not differ by sex or age class and was 0.79 (SE = 0.04). Most of the elk (76.4 percent) have remained within a 10 km radius of the release site on Royal Blue Wildlife Management Area, Tennessee.

We are currently planning on releasing 30 more animals in the coming year. Additional data will be collected on food habits, genetic relatedness of groups, reproductive effort, and habitat selection.

IMPACT: While the release of elk to the area has been successful thus far, restoration of a native species requires continual research and monitoring to ensure that we maintain healthy, productive elk populations in Tennessee while minimizing human-elk conflicts.

FUNDING: McIntire-Stennis Cooperative Forestry, Special Research Grants, Tennessee Wildlife Resources Agency, Rocky Mountain Elk Foundation

#

TITLE: Backyard wildlife management

ISSUE: People are eager to learn ways to attract wildlife around their homes. At the same time, many folks have problems with nuisance wildlife. Dealing with these species and the associated damage is a perennial issue.

WHAT HAS BEEN DONE: Four seminars were given to 70 homeowners and natural resource professionals concerning ways to attract wildlife around the home as well as ways to manage nuisance wildlife species and their associated damage. More than 2 thousand Extension publications addressing backyard wildlife management were mailed or hand delivered to interested persons.

IMPACT: Homeowners learned which types of bird feeders were most effective and which seeds and other foods attracted various bird species. They also learned how to landscape around their house to provide wildlife with food and cover requirements with trees, shrubs, and herbaceous plants. Those experiencing wildlife damage were taught methods used in controlling

nuisance animals and ways to keep the problem(s) from occurring again.

FUNDING: UT Agricultural Extension Service

#

TITLE: Landowners Improving Wildlife Habitat

ISSUE: Landowners want to improve their forests and woodlots for wildlife. Most of these stands have a closed canopy, which allows relatively little light into the forest floor. As a result, the herbaceous layer is sparse to non-existent. Often, mast is limited because the stand is dominated by non-mast producers. Forest management is normally guided by economics and few are managed specifically for wildlife. For many landowners, however, enhancing wildlife habitat is their primary objective.

WHAT HAS BEEN DONE: Seven seminars were given to 350 people, including natural resource professionals, landowners, and students. Demonstration sites were maintained on two wildlife management areas that show techniques used in managing woodlots, primarily for wildlife. In these stands, thinning and burning have been used to improve habitat for a variety of wildlife species.

In 2000, a cooperative study was initiated with the TN Division of Forestry and the TN Wildlife Resources Agency (TWRA) to compare the effect of different silvicultural techniques (including various thinning and burning treatments) on wildlife habitat in upland hardwood forests. Two MS students in the Department of Forestry, Wildlife, and Fisheries have worked on the project, which will be completed in summer 2003. In addition, another cooperative study with the US Forest Service (USFS), NC Wildlife Resources Commission (NCWRC), and the Ruffed Grouse Society was initiated in 1999 to investigate the effect of alternative silvicultural practices on ruffed grouse in the southern Appalachians. Three graduate students (2 MS and 1 PhD) in the Department of Forestry, Wildlife, and Fisheries have worked on this project. The USFS, TWRA and NCWRC are currently using information gathered in this study to better manage ruffed grouse populations, impacting wildlife on over 50,000 acres of forest land. More than \$320,000 in grants and contracts has been generated to implement these forest management projects in the last four years.

IMPACT: Landowners have learned techniques to improve their woodlot for wildlife. Thinning and burning have increased the herbaceous cover within the stands treated. Burning alone does appear to stimulate the vegetation response realized when done after a thinning operation. As the project goes on, we are learning more about the effects of thinning and burning on the vegetation composition, food availability and habitat suitability for a variety of wildlife species.

FUNDING: UT Agricultural Extension Service, US Forest Service, National Wild Turkey Federation, NC Wildlife Resources Commission, Ruffed Grouse Society, BASF Chemical

GOAL 5: Enhanced economic opportunity and quality of life for Americans.

Overview

Major program/research areas included under Goal 5 of the Tennessee Agricultural Research and Extension System Plan of Work included: community economic development issues and quality of life issues (personal economic health, workforce preparation; parenting and child care; lifestyle choices, character education and life skills). The following describes the projects and programs conducted by the UT Agricultural Experiment Station, the UT Agricultural Extension Service and the TSU Cooperative Extension Program in addressing these areas. More specific information related what was done and what impacts were achieved in each area is included under the Key Theme section.

Community Economic Development Issues:

Quality of life for communities, families and individuals in Tennessee is impacted by the interactions of financial, physical, mental, and emotional health. Tennessee State University Cooperative Extension program will identify, develop and disseminate information designed to improve economic and quality-of-life conditions of Tennessee citizens and communities. Tennessee communities, both rural and urban, are facing significant changes in their economic and social environments. In the past, traditional economic activities such as production agriculture have aided rural communities in determining direction of growth and development. The declining economic impact of agriculture and its associated support industries on local economies has left many communities concerned about issues related to community well-being such as: jobs and family income, in-adequate workforce for new and existing jobs, and stability of families. Extension agents in Crockett, Dyer, Davidson, Henderson, Lauderdale, Rutherford, and Shelby counties provided educational programs to address some of these issues. The community resources development (CRD) extension specialist conducted a need assessment to identify communities and individuals that might benefit from CRD educational programs.

Quality of Life Issues:

Personal and Economic Health

Haywood County UTAES faculty collaborated with the Brownsville-Haywood and Fayette County COCs, BellSouth, and the Fayette-Haywood Enterprise Community to conduct a year-long educational program series for small business owners. The program involved Extension Agricultural Economics, Small Business Administration, Memphis Association of Area Governments, Southwest Tennessee Development District, Union Planters Bank, InSouth Bank, First South Bank, and Tennessee Career Center personnel teaching various components of business ownership. The program also featured a week long 17 hour computerized bookkeeping class.

The adult FCS agent works on an ongoing basis with the Smith County Habitat for Humanity organization to provide 50 hours of financial management training for each of the families

chosen to receive a home. Approximately 2 homes per year are built through Habitat for chosen families. One or both parents attend the training which is provided before or after their work hours. Families must also complete additional work at home with all family members participating who are of age.

The University of Tennessee Agricultural Extension Service held annual workshops in major urban centers in cooperation with the US Forest Service and the Tennessee forest community beginning in 1995. More than 300 people have participated in timber tax training either in a day long workshop or a two- hour presentation at one of several county meetings. More than 1000 contact hours took place in 2002.

Workforce Preparation

Preparing youth for the workforce continues to be a priority of the 4-H youth development program in Tennessee. Over this past year, numerous counties have developed and implemented educational programs to better prepare youth to enter the world of work. In Davidson County, 244 youth participated in three one-hour sessions covering various topics on manners: best foot forward, it's easy to be polite, greetings and introductions, telephone manners, and table setting etiquette. These sessions were taught using videos, group discussions, hands-on experience, visuals, handouts and demonstrations. In the same county, 624 members were enrolled in 25 traditional 4-H clubs. Extension agents developed and presented educational programs in the areas of parliamentary procedures, public speaking, written and oral communication using different teaching methods (group discussions, working in teams, using visuals, speaking, voting, research and exhibits).

To tackle the timely issues of financial management skills and workforce preparation, a 4-H school enrichment program was planned, targeted to 7th and 8th grade youth. This program used the TIRES model (Trends, Interests, Relocation, Education/Training, and Salary Goals) proposed by Extension Specialist Dena Wise. More than 500 7th and 8th graders in Giles County have received 5 hours of workforce preparation instruction, culminating with the ON MY OWN simulation. This simulation assigns each student a career, monthly income, and family situation. Students are challenged to budget their income for one month among multiple needs and wants, such as food, clothing, child care, transportation, housing, and more. In cooperation with the Extension Family and Consumer Science Agent Myra Walker, more than 10 volunteers were recruited and trained to assist with the ON MY OWN simulation. Seven teachers and guidance counselors were recruited and trained to assist with the ON MY OWN simulation and to conduct the evaluation and follow-up with the students.

Parenting and Child Care

Tennessee has one of the highest divorce rates in the nation. Overall, children whose parents divorce have higher rates of emotional problems, academic problems, and engage in higher risk behaviors than do children of intact, two-parent families. The state has passed legislation

requiring divorcing parents of minor children to complete at least four hours of parent education related to issues around divorce with the goal of reducing the negative impact of divorce on children and reducing conflict between parents about issues related to the children. Tennessee Extension Family and Consumer Science agents and specialists have developed educational programs to address the implications of divorce on families and children and implemented them across the state.

Lifestyle Choices, Character Education and Life Skills

Tennessee teens rank higher than many national averages in at-risk behaviors. Tennessee's teen violent death rate in 1997 was nearly 35 percent higher than the national average. The teen birth rate is higher than the national average (32 percent) at 39 percent per 1,000 females ages 15-17. Teen dropout rates are high in Tennessee at 13 percent compared to the national average of 9 percent. 69 percent of the sample group reported using alcohol at some point in their lives. The drugs that followed behind alcohol were cigarettes, with 63 percent reporting use; any illegal drug, at 43 percent; and marijuana, at 38 percent over a lifetime (State of the Child, 2000). Teens participating in these behaviors risk taxing the already overburdened state budget if programs are not in place to prevent costly life style choices. 4-H has numerous programs that attempt to address these problems. This year, 4-H has expanded its efforts in the Character Counts educational program as it continues to teach some of the more traditional life skills to children in Tennessee.

Allocations for Goal 5 Projects and Activities:

UT 1862 Research:

Hatch - \$116,842
Multistate - \$37,384
State Outlays - \$645,234

UT 1862 Extension:

Smith-Lever b and c - \$3,001,269
Smith-Lever d - \$20,000
State and County Allocations - \$11,302,054

TSU 1890 Extension:

Smith-Lever b and c - \$521,476
State and Local Allocations - \$79,206
Special Grants - \$41,000

FTE's for Goal 5:

UT 1862 Research - 5.9

UT 1862 Extension - 133.6

KEY THEME - COMMUNITY DEVELOPMENT

TITLE: Improving Leadership skills of existing and potential leaders.

ISSUE: Overton is a rural county and like other rural communities, face many challenges in the future. Programs are needed to motivate and train people to enhance their leadership skills in addressing these challenges and various other community needs while telling the agriculture story. This was a need addressed by a Total Quality Community Partnership Survey conducted recently.

WHAT HAS BEEN DONE: Local Ag. Agent, County Extension Staff, Agriculture Extension Committee, Resource Development Committee, and a core group of interested leaders from both the local chamber and the RD committee networked with other agencies to plan, develop, start, and evaluate a county leadership training program referred to as Leadership Overton. The County Executive, Livingston Mayor, and other various other governmental officials were polled to see if they felt that a leadership training program was needed to help people develop skills and would they support such a program. All conferred with promoted such a program and felt that it was much needed. With the assistance of the Resource Agent in the District Office, all other on-going leadership programs were surveyed for their good and bad points from across the mid-state area. Mass media was used to advertised the program along with Extension and Chamber mailing lists. A seven day training session on such topics as city and county governments, health, education, agriculture and community development, state government, and the judicial system was decided upon. Included in these training sessions were tours, homework assignments, group assignments, guest speakers, debates and round table discussions. A overnight stay and tour of our state legislature and capital along with a graduation was utilized also. Evaluations were used after each session.

IMPACT: Since its beginning, 88 participants have graduated from this program with a greater awareness and appreciation of issues facing Overton County. Currently six of the fifteen county commissioners have graduated from the program, along with various other governmental officials including persons from police, sheriff, education, bank, city council, agriculture professionals. Graduates have a better understanding fo agriculture, community issues, and are better qualified to accept and serve in leadership roles in the city and county. Leadership Overton is one of 22 on-going leadership training programs in the Cumberland District that was initiated by and in cooperation with the Extension Sevice. Five Extension Agents from the Overton County Staff have graduated from this program. Leadership Overton is the first of its

kind in this county and all the benefits and impacts will not be seen until some time later. Since Leadership Overton's inception, 15 other counties in this district have started programs of such as this. Also, counties have now development youth training programs in many of the Cumberland counties.

FUNDING SOURCES: General Extension Funds, Fees collected from participants, local sponsoring businesses, and the local chamber of commerce.

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#

TITLE: Adult Leadership and Community Development

ISSUE: Grundy County has eight (8) small towns, each with one elected mayor. The structure of each town is similar but each has its own personality. The community leaders do not work well together in achieving their goals according to personal observations. The county doesn't have a strategic plan nor an organized, broad-based resource development committee according to office records. According to Jimmy Earle, Assistant Commissioner of E&CD in Nashville, an adult and youth leadership program is required to become a three-star community.

There had never been an adult leadership program in Grundy County until September of 2001. Evaluations from Leadership Grundy participants and comments from the Grundy County Chamber of Commerce Board indicate the need and importance of the development of effective leadership and communication skills to achieve goals for the improvement and growth of the area.

WHAT HAS BEEN DONE: The Ag. Extension Agent assisted in organizing a committee that planned and carried out the adult leadership program. The Ag. Agent assisted with planning, implementing, and evaluating eight (8), eight-hour monthly educational sessions and monthly planning meetings. These six-hour educational sessions focused on providing information and knowledge related to such subjects as life skills development, team building, conflict resolution, learning how state and local governments work, growth planning, education, regional economics, and environmental issues. Lessons included outside assignments. Agent took leadership in implementing all programs conducted. Each session had a planned agenda, time for social interaction, and a written evaluation. Each person received a three-ring binder to collect and store all materials received from programs delivered. More than five thousand dollars (\$5000) was raised through local business donations and sponsorships to support the leadership program. Twenty (20) participants were selected from all communities in Grundy County to represent the first Leadership Grundy Class of 2002.

IMPACT: Twenty (20) citizens of Grundy County participated in educational meetings once every month. Eighteen (18) participants graduated from Leadership Grundy 2002. Follow-up

evaluations and pre-tests/post test results from educational meetings indicate the following: 56% knowledge gained from the personality development program; participants reported increasing their knowledge by 67.5% on how to deal with conflict; 36% knowledge was gained from the growth planning program; 62% knowledge increase on developing themselves as a leader; 36.5% knowledge was gained on the history of Grundy County; participants reported increasing their knowledge by 47.5% on the health care system in Tennessee and in Grundy County.

Participants

also reported that the Leadership Grundy program was very informative and information that was provided in monthly programs could be used in their everyday life.

Since the graduation of the first Leadership Grundy program one member has established and headed a local non-profit organization dedicated to assisting citizens in the county in the development of small businesses. One other graduate has opened a new motocross facility and taken the ownership and management role. Several of the adult leadership graduates have taken the leadership to develop the first youth leadership program for Grundy County. These leaders have made an impact on the social, environmental, and economic conditions of Grundy County as a result of the Leadership Grundy program and personal dedication to their community.

FUNDING SOURCES: Extension, Local businesses, and Sponsorships.

#

TITLE: Community Economic Development

ISSUE: Quality of life for communities, families and individuals in Tennessee is impacted by the interactions of financial, physical, mental, and emotional health. Tennessee State University Cooperative Extension program will identify, develop and disseminate information designed to improve economic and quality-of-life conditions of Tennessee citizens and communities.

Tennessee communities, both rural and urban, are facing significant changes in their economic and social environments. In the past, traditional economic activities such as production agriculture have aided rural communities in determining direction of growth and development. The declining economic impact of agriculture and its associated support industries on local economies has left many communities concerned about issues related to community well-being such as: jobs and family income, in-adequate workforce for new and existing jobs, and stability of families. Extension agents in Crockett, Dyer, Davidson, Henderson, Lauderdale, Rutherford, and Shelby counties provided educational programs to address some of these issues. The community resources development (CRD) extension specialist conducted a need assessment to identify communities and individuals that might benefit from CRD educational programs.

WHAT HAS BEEN DONE: Two community development regional conferences were held to address the needs of identified communities. In Franklin county Agricultural outlook conference provided information to local farmers and businesses about the present and future of agricultural commodities in the area. The leadership development and money management courses were taught to youth and adults in Crockett, Cheatham, Davidson, Dyer, Henderson, Rutherford, Lawrence, Lauderdale, and Shelby counties. These classes focused on the following topics:

leadership, job seeking skills, county government, agricultural industry, health and wellness and money management. Participants toured different sites in the counties, as well as local businesses, to learn about community and economic development issues in the region. The CRD Extension specialist has identified several hundred, limited resource, minority farmers and landowners in 22 counties in Tennessee to provide critically needed educational information including the rights and responsibilities of landownership.

IMPACTS: The leadership course offered to youth in Crockett county, Cheatham county, Davidson county, Henderson, Hamilton county, Lawrence county, Rutherford county and Shelby county provided students hands-on educational sessions on leadership, money management, entrepreneurship, and economic development. In Dyer County, several dozen students learned how to become good leaders and citizens, as well as to improve their self-esteem and self-confidence by speaking in front of the county officials, businessmen and women, as well as their peers. Over 1400 limited-resource minority farmers and landowners were identified to target for educational information regarding farming, community and economic development issues and rights and responsibilities of landownership. Landownership fact sheets are being developed.

FUNDING: USDA/CSREES and Tennessee State University Cooperative Extension Program

KEY THEME - PERSONAL ECONOMIC HEALTH

TITLE: Building Financial Management Skills in Bledsoe County, TN

ISSUE: The economic condition of Bledsoe county continues to deteriorate with another major employer closing this summer. High poverty levels (18%+), lack of employment opportunities (plants closing), low levels of education, the large number of food stamp recipients (13.7%), the large number of children eligible for free (48.8%) and reduced lunches and the rising number of bankruptcies and divorces (which statistically go hand in hand) foster a need for greater money management.

WHAT HAS BEEN DONE: Agent has spent most of her time in this area this year laying the foundation for a program. Training attended: Gateway to a Better Life's Making Every Dollar Count with TN/GA Extension, Tennessee Saves Conference, Entry Level Job Skills and Image Building in-service. Agent partnered with the Family Resource Center and Adult Basic Education to teach the classes with their students in Family's First. Classes began in November with 6 students but due to scheduling conflicts only 2 of 6 sessions were held in 2002. (We discovered in January 2003 that 4 of our 6 students had passed their GED exams and graduated from the program.)

Agent visited 3 bankers, county executive, superintendent of schools, high school teacher, and adult basic education teachers to explain TNSAVES and encourage them to participate in the Conference and program. The teachers have committed to partner in the TNSAVES kickoff and program. The TNCEP coalition and FCE county council and members have been kept informed of the planning activities of TNSAVES and have been encouraged to participate. Agent participates with TNSAVES Coalition in Chattanooga area and has attended 3 planning meetings. The TNSAVES Kick-off is planned for March 2003.

Agent has held 3 budgeting classes with a member of the TNCEP Homemakers group dealing with credit and interest, menu planning and shopping and general budgeting. Agent also helped with a Poverty Simulation at Fall Creek Falls for a state agency, wrote 1 news article and 1 display at the county fair on elder fraud, and 250+ handouts.

IMPACT: A follow-up evaluation of Making Every Dollar Count will be done at the end of the program (6 classes). Adult Basic Ed. teacher asked one of the remaining students if the budgeting class was a help to her. She replied Yes, I am planning my money for the month so I don't run out before the month is over. TNCEP homemaker was shocked to find out that borrowing \$300 and repaying \$400 dollars was 33.3% interest and that is before her \$10 late fee every time she was late. A pretest revealed she had no financial training and little knowledge of what she needs. Adult Basic Ed. teachers and high school teacher asked agent to present their students with the TNSAVES program in March and bankers indicated they were interested in participating in some way.

FUNDING: Extension Funds

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TITLE: Affordable Housing and Financial Management

ISSUE: According to the February/March issue of Habitat World, a full 5.3 million families in the United States lack an adequate place to live, including no running water, no flush toilets, no electricity and /or heating equipment. In 1990, the U.S. Census Bureau reported that 7.6 million people are living below the poverty level in rural United States. In Tennessee, a low income person must make a minimum of \$7.74/hr. To afford the FMR (Fair Market Rent) on a 1 bedroom apartment and \$9.50/hr. To afford the FMR on a 2 bedroom apartment. The Center for Literacy Statistics show that the per capita income for Smith County in 1990 was \$10,950. For a low income person renting a 2 bedroom apartment, more than half of the yearly income would be spent on housing (\$5928. per year). In Smith Co., 22% of persons receiving AFDC or welfare benefits live in subsidized housing while other low income families live in one of 2 substandard trailer parks or in other poverty housing around the community. According to the Gallatin/South Carthage Housing Authority, there are 170 units of subsidized housing which generally run at 96% capacity. Both the local Habitat for Humanity Board and the FCS Advisory Committee agree that there is clearly a need to affordable, quality housing for low income working families

to learn basic budgeting and financial management skills.

WHAT HAS BEEN DONE: The adult FCS agent works on an ongoing basis with the Smith County Habitat for Humanity organization to provide 50 hours of financial management training for each of the families chosen to receive a home. Approximately 2 homes per year are built through Habitat for chosen families. One or both parents attend the training which is provided before or after their work hours. Families must also complete additional work at home with all family members participating who are of age.

IMPACT: The 7 families, who have received homes and the financial management training, completed evaluations at the end of their 50 hours. Follow up evaluations were also completed on the families. Over the past 3.5 years, all families have been able to keep their homes and stay up to date on payments. Only one family has had any type of financial problems and that only after the father lost his job. Their car was repossessed, but they have been able to make their house payments. One family reported that because of their training with Extension, they no longer use Rent-To-Own or check cashing companies which they now realize are poor financial practices.

FUNDING: Extension

#

TITLE: Small Business College

ISSUE: According to the Brownsville Downtown Merchants Association (2001) since 1996 the city had a 3% decrease in retail businesses. The Association comprised of bankers, realtors, accounting firms, and small shop owners identified lack of educational programs for small business owners as the main reason for failure. Currently there are 363 small businesses in the county. According to the Brownsville-Haywood County Chamber of Commerce (COC) (2001) these businesses employ 1,893 people. The UTAES Haywood County Economic Profile reported that these businesses accounted for \$6,157,440 in sales tax revenue.

WHAT HAS BEEN DONE: Haywood County UTAES faculty collaborated with the Brownsville-Haywood and Fayette County COCs, BellSouth, and the Fayette-Haywood Enterprise Community to conduct a year-long educational program series for small business owners. The program involved Extension Agricultural Economics, Small Business Administration, Memphis Association of Area Governments, Southwest Tennessee Development District, Union Planters Bank, InSouth Bank, First South Bank, and Tennessee Career Center personnel teaching various components of business ownership. The program also featured a week long 17 hour computerized bookkeeping class.

Impact: As a result of this programming effort, 18 small business owners received 32 hours of classroom instruction concerning the various phases of proprietorship. Class included personnel

management, business plan development, acquiring financing, marketing, e-business, technology assessment, computerized bookkeeping, tax management, and accounting principles. Seven individuals completed the aforementioned 17 hour computerized bookkeeping class. As follow-up tracking takes place, all 18 business are operating at an above performance than a year earlier. It should also be noted that the banks gave two loan points to people that completed the program.

FUNDING: Regular Extension and Fayette-Haywood Enterprise Community

#

TITLE: Community and Economic Development: FarmerÆs Market

ISSUE: For five years the Putnam Co. agent along with volunteers and the Director of Cookeville City scape has organized and maintained a farmers market in a church parking lot in Cookeville. Members of the community indicated a need for fresh homegrown fruits and vegetables by shopping the market every year. This also proved to be of economic value to the 15 producers who sold there during the summer. However space was limited and the market could not continue to grow.

WHAT HAS BEEN DONE: When a suitable piece of city owned property became vacant, the agent and the City scape Director lobbied City of Cookeville for the use as a market location. The organizing committee(City scape Director and Extension Agent) agreed to seek grants to help construct the facility, inform and organize producers, inform the public, develop rules and regulations and seek volunteers to assist in landscaping and maintaining the facility.

IMPACT: The organizing gathered information from various counties and states to assist in developing a plan for the market.

- >Two separate grants were applied for and received
- >A contract was initiate with city officials to match the grants with labor and equipment
- >A 75,000 sq. ft facility was built with electricity and water
- >Two meetings were held to attract, inform and organize producers
- >101 producers applied for and received permits to sell produce
- >Putnam Co. Master Gardeners planned, landscaped, and maintained the market, donating over 125 volunteer hours
- >The market was open from June through October and was very successful

FUNDING: Extension funds, grants from USDA, City of Cookeville and local sponsors

#

TITLE: TnFARMS: Tobacco Quota Buyout Simulations

ISSUE: As uncertainty continues to surround the future of tobacco production - especially related to a prospective tobacco quota buyout and significant modifications to or elimination of the federal tobacco program - tobacco stakeholders and decision makers have a high level of demand for information about the impacts of potential changes in the tobacco program and marketing system. Five separate pieces of tobacco quota buyout and transition legislation were introduced during the year. A wide variety of tobacco stakeholders including agricultural leaders, tobacco producers, extension personnel, news media, and others have requested information about various aspects of the proposed legislation and also questioned the potential impacts of the legislation at the farm level.

WHAT HAS BEEN DONE: Three representative tobacco farms (Greene County, Robertson County, and Macon County) in the TnFARMS set were updated and a new representative tobacco farm (Macon County) was created. The four representative tobacco farms were used to simulate the impacts of a much-talked-about tobacco quota buyout based on proposed tobacco quota buyout and transition legislation. Simulations indicated that the buyout proposals introduced would significantly improve the financial situation on all farms during the buyout period, but that smaller tobacco farms may not be able to feasibly continue tobacco production after the buyout period.

IMPACT: This project has provided a considerable amount of information about various proposed tobacco quota buyout and transition legislation. Side-by-side comparisons of the various bills introduced have been used widely by farm groups, tobacco growers, news media, and congressional staffers. Results of the farm-level simulations of key aspects of the buyout legislation have shown that all four tobacco farms improve their profitability and reduce their financial risk during the buyout period. After the buyout period, however, the smaller farms face considerable risk and lower profitability and may be unable to continue producing tobacco. This project has provided key information to tobacco growers and others evaluating alternative tobacco buyout plans.

FUNDING: Hatch Act

#

TITLE: TnFARMS: Farm Bill Simulations

ISSUE: Tennessee farmers need information about how alternative agricultural and environmental policies, regulations, economic conditions, and management strategies affect their farm's financial position and strength. TnFARMS is a set of representative farm models that encompasses major segments of agriculture in Tennessee. Although the representative farms are not an exact match for any single commercial producer, producers in the state should be able to identify with one of the representative farms in terms of size, enterprises, operations, and financial position. For each scenario evaluated, the representative farms provide annual estimates of each farm's receipts, costs, and returns, and performance indicators such as the probability of

a cash flow deficit, the probability of losing real net worth, and the probability of meeting minimum cash needs.

WHAT HAS BEEN DONE: Two Southwest Tennessee cotton farms and the two Northwest Tennessee grain farms have been used to simulate the impacts of the 2002 Farm Bill on Tennessee crop farms. Simulations showed that the new farm bill considerably improves the financial situation and outlook for Tennessee cotton and grain farmers considerably, compared to continuation of the 1996 Farm Bill without supplemental assistance.

IMPACT: Results of the farm-level analysis of the 2002 Farm Bill indicate that the financial situation and outlook for Tennessee cotton and grain farmers improves considerably under the new legislation (assuming no emergency or additional ad hoc government payments). These results have dual impacts: the farm-level and the policy-level. At the farm level, the information provided by the analyses is critical in helping farmers make business decisions based on reliable policy analysis. At the policy-level, results from the four farms have been included in a larger national set of representative farms (in cooperation with the Agricultural and Food Policy Center at Texas A&M University) and presented to Congress, providing a significant contribution to the policy debate process.

FUNDING: Hatch Act, Commodity (Cotton Incorporated)

#

TITLE: Timber Taxes

ISSUE: Few Tennessee taxpayers had an adequate understanding of timber management incentives contained in the Federal tax code. This deficiency resulted in landowners' reluctance to more actively manage their timber as they were paying more taxes than required by law. In furthering the state's efforts in forest stewardship, this needs assessment suggested that delivery of tax-saving information would improve participation in Extension programming and develop aspirations for improving profits from timber management.

WHAT HAS BEEN DONE: The University of Tennessee Agricultural Extension Service held annual workshops in major urban centers in cooperation with the US Forest Service and the Tennessee forest community beginning in 1995. More than 300 people have participated in timber tax training either in a day long workshop or a two- hour presentation at one of several county meetings. More than 1000 contact hours took place in 2002.

A separate "Timber Tax" program in 2001 resulted in our developing and conducting "Timber Tax" workshops for the Tennessee Farm Bureau Tax Preparation service, with well over 300 contact hours.

IMPACT: Timber sale income filed as a long-term capital gain saves taxpayers in the lowest bracket 5 percent. Rough calculations indicate that annually \$14 million could be saved on

Federal Income taxes if timber sales income were filed correctly. Additional savings accrue by correct filing of annual expenses and efficient record keeping.

FUNDING: Smith-Lever 3(b) & ©

#

TITLE: Economic Assessment of Agricultural Risk and Financial Management Strategies

ISSUE: Timing of cotton defoliation and harvest has a significant impact on the net returns for cotton production.

WHAT HAS BEEN DONE: Partial budgeting and statistical analysis techniques were used to evaluate the effects of alternative defoliation timing and harvest-aid strategies on lint yields, prices adjusted for fiber quality, and net revenues using data from a 1998 through 2000 study. Harvest-aid treatments were: (1) a tank mixture of thidiazuron and ethephon; and (2) a prepared mixture of cyclanilide plus ethephon. These treatments were applied at 361, 417, 472 and 528 degree-days after cutout each year. Price differences for fiber quality were calculated using fiber quality measured from the experiment and North Delta spot price quotations from contrasting marketing years.

IMPACT: Improved fiber quality and enhanced yields from cotton harvested after defoliation at 528 degree-days after cutout maximizes cotton crop profitability. Findings suggest that delaying defoliation to 528 degree-days after cutout also can facilitate a single harvest of cotton.

FUNDING: Hatch Act

#

TITLE: Economic Impacts of the Hog Industry in West Tennessee

ISSUE: The hog industry has undergone extensive restructuring during the past decade. Growth of the industry in neighboring North Carolina has sparked interest in potential growth of the hog industry and its potential impacts.

WHAT HAS BEEN DONE: An economic impacts analysis of large scale hog processing and associated hog operations facilities in West Tennessee was conducted.

IMPACT: A meat packing facility and associated hog industry could bring significant industry output to the West Tennessee Region (over \$311 million in estimated total output impacts). While prior studies have found negative impacts of hog operations on nearby property values, this study showed that for the region, negative economic impacts from costs of measures to control disamenities associated with the hog industry, such as lagoon covers and liners to all hog operations supplying the meat packing plant would be greater than the losses in economic

activity due to personal and business property tax declines with falling property values from hog operations locating nearby.

FUNDING: Hatch Act, commodity (Tennessee Soybean Promotion Board, Tennessee Farm Bureau), State (Tennessee Department of Agriculture), Other (USDA/Rural Development, Tennessee Valley Authority)

#

TITLE: Dreamers of Ideas. . .Entrepreneurs of Tomorrow

ISSUE: According to the U.S. Association for Small Business and Entrepreneurship indicates that small-based businesses are on the raise. However, the idea for home-based/small business has only been a dream for many limited-resource individuals that lack the knowledge and support for getting established. Limited-resource individuals are faced with three major barriers to starting, expanding small self-employment ventures. First, they lack access to working capital. Second, they generally lack collateral and sound credit history. Third, they generally lack entrepreneurial skills, knowledge, information and management skills and experience to succeed in the competitive business market. Extension along with the College of Business and the Department of Agricultural Sciences will implement a project entitled Dreamers of Ideas...Entrepreneurs of Tomorrow to address these issues and others while focusing on helping individuals develop skills for permanent and self-employment. Long terms outcome will be to increase employment, income and quality of living in selected rural counties. The one year project is comprehensive in nature, as it will emphasize the development of self-esteem, personal and business development skills, for self-employment pre-apprenticeship and enhancement of skills for job retention.

WHAT HAS BEEN DONE:

Past: The project builds upon the success of activities and continuation of work that has been done in past entrepreneurial programs conducted by Tennessee State University (TSU) in selected rural counties in Tennessee and Mississippi. The existing partnership between various organizations and agencies from past projects will be expanded to that of a multi-state collaboration to include representatives from Extension, local agencies and community leaders.

Presently: The TSU Cooperative Extension Program, School of Business, and the Department of Agricultural Sciences secured a grant for \$100,000 through the USDA Rural Business Cooperative Service to implement an entrepreneurial project in rural communities. With in-kinds contributions from the University, the total amount for grant funding is \$199,540. A Coalition was established to provide guidance and implementation for the Dreamer of Ideas. . . .
Entrepreneurs of Tomorrow Project: The Coalition consist of Extension faculty/staff and community leaders from five counties in West Tennessee (Dyer, Crockett, Hardeman, Haywood, and Lauderdale), and three counties in Mississippi (Clay, Bolivar and Washington). Eight counties in Tennessee and Mississippi received training to implement phase 1 of the

Entrepreneurial project with a total of 9 participants representing local Extension offices and job placement centers. Dyer County has scheduled its first Business Planning workshop with residents who are interested in starting a business and for small business owners who are interested in developing a business plan as a guiding tool for tracking the success of their business efforts. The participating counties will shortly receive phase II of the business.

IMPACT: Success in securing a \$100,000 grant to provide opportunities for limited-resource individuals in rural communities to receive skills in entrepreneurial/business experiences. Establishment of a Coalition consisting of Extension, local agencies and community leaders, representatives from Tennessee and Mississippi to provide guidance and implementation in participating counties. Funds from the project's grant have provided operating funds to counties to teach train-the-trainer business development workshops in their respective counties. Representatives from eight counties in Tennessee and Mississippi have received business development training and have scheduled business workshops in their respective counties.

FUNDING: USDA/Rural Business Cooperative Service, CEP

#

TITLE: Personal and Economic Health

ISSUE: Personal and economic health are major issues facing Tennesseans. The State of Tennessee currently ranks second in the nation in bankruptcy rates (in 1998, one in every 40 Tennessee households had filed for bankruptcy). This information indicates that families desperately need information and assistance in dealing with financial management, including the wise use of credit.

WHAT HAS BEEN DONE: The TSU extension agent in Crockett County planned and conducted six financial management lessons with six young families in a local housing unit. Two weeks focused on stretching the food dollars, two weeks on budgeting, and two weeks on checking account procedures. The program was delivered through small group instruction to help each individual personally understand the contents. Agents were on sight to provide assistance with clients, as bankers explained the process.

In Lauderdale County, the Parenting and Consumer Education (PACE) team conducted a group needs assessment session in cooperation with the Department of Health personnel. Information was used to develop curriculum for parenting and financial management. Two 20 hour curricula were developed in parenting (*Kids Smart*) and financial management (*Money Wise*) as a result of this need assessment.

IMPACTS: During 2001-2002 six young families in Crockett County were able to open and maintain current checking accounts with local banks. A quarterly evaluation was conducted to see if standards are still being met with the clients on their checking account. Participants are

still meeting standards. Participants also used weekly coupons, and were alert of weekly sales at their local grocery store. The six families learned the importance of monthly shopping versus weekly shopping, and how much could actually be saved with coupons if used before the expiration date.

In Lauderdale County, 264 Families First facilitators and Department of Human Services(DHS) personnel were trained, 75 percent of those trained facilitators have implemented the curricula and adopted new facilitating and teaching methods in preparing a family spending plan, setting money goals, stretching food dollars, buying a used car, guidance and discipline for children, child's developmental and growth patterns, setting limits, ground rules, time management, parenting styles, learning to listen, check cashing stores, fraud and rip offs.

FUNDING: USDA/CSREES and Tennessee State University Cooperative Extension Program, DHS, and PACE Program.

KEY THEME - YOUTH DEVELOPMENT/4-H

TITLE: 4-H Judging Contests Increases Consumer Knowledge

ISSUE: Lack of proper nutrition and good heating habits have reached critical levels in the United States. With the influx of email and catalog shopping, knowledge about clothing purchases is also needed. Teens enjoy their space, and the 4-H Interior Design Judging teams teaches consumer knowledge in making home decorating, houseplans and furniture decisions. Providing education, information and training to 4-H members to encourage these consumer skills is very valuable. Also, many youth are looking for information about future careers and these judging programs provides them much knowledge in the areas of culinary, dietetics, fashion merchandising, fashion design, architecture, and interior design.

WHAT HAS BEEN DONE: The County 4-H FCS agent along with Volunteer leaders market judging teams to sixth grade - eleventh grade students at the end of the school year each May. Students sign up for their favorite interests. Volunteer leaders help set up practice sessions and learning venues. Students do practice judging contests and study project materials. Many of these teams take field trips to visit architects, paint vendors, retail clothing establishments, grocery stores, and restaurants. The teams each consist of four members and they practice communication skills as a group effort. Most of the judging contests require oral reasons on one of the classes in the event.

IMPACT: In 2002, 28 students participated on FCS judging teams. The Jr. High Food & Nutrition teams placed 2nd and 4th. The Sr. High Food & Nutrition team won the District contest and placed fourth at the State contest. The JR. High Interior Design team placed first at

District. The Jr. High Clothing team placed fourth, and fifth at District. The Sr. High judging team won the STATE contest placing first. Personal observation reflects the knowledge these students have learned. Third party sources, parents - volunteer leaders report how much judging has helped these 4-Hers. They work on social skills, communication reasoning skills, and learn basic project knowledge. Many have mastered nutritional values of foods, proper serving sizes and nutrients of foods. One of the 4-Hers is planning a college career in Interior Design. Another 4-Her has explored the major of fashion merchandising as a career. One student from Trousdale county is completing her Interior Design degree this May from Western Ky. University.

FUNDING: Cooperative Extension Resources

#

TITLE: 4-H Teen Programming

ISSUE: There are approximately 15,880 teens enrolled in 4-H in Cumberland District counties. The Cumberland District is served by 42 agents with varying levels of 4-H responsibility. Opportunities to acquire and use leadership skills are important to the development of youth into productive, responsible citizens. Billing states in an article in Phi Beta Kappan that students who are involved in service learning programs are less likely to engage in the risk behaviors listed above. She further cites that these students have a greater sense of civic and social responsibility. The objective of this program was to enhance teen programming and improve programs and activities that are related to Honor Club, All-Stars, and Sigma Lambda Chi

WHAT HAS BEEN DONE: The specialist networked with Agent Committee to facilitate and redesign Jr. High Camp in order to better into a Leadership conference which promoted team building and leadership. The specialist networked and collaborate with All-Star Officers and Advisors in planning for Spring and Fall Conference and All-Star High Council in order to increase the effectiveness of the All-Star program with an emphasis on service learning. The specialist worked with agents and State Specialists in conducting Teen Adventure Weekend. The specialist promoted Seeds of Service grants to agents in order to increase the number of 4-H members in Cumberland District doing service learning projects.

IMPACT: While teen participation numbers fell in the Cumberland District in almost every category, there was some positive impact. The total number of All-Star Service project hours increased by 113 hours in 2002 over the previous year. In addition 12 counties were awarded seeds of service grants in 2002 as opposed to just 5 in 2001. In terms of teen involvement, in 2002 21 counties had at least one Honor Club initiate as opposed to 17 in 2001. Also 22 counties had All-Stars who attended a conference in 2002 as opposed to just 17 the year before.

FUNDING: Extension Funds at the District level. Many county Clover Bowls have a sponsor outside of Extension.

#

TITLE: Trousdale County 4-H Members Become Effective Communicators

ISSUE: Students need to increase their oral and written communication skills. School system report cards for 2002 indicate that 4-8th grades students scored a D in Reading and a C in Language Arts. Results for 2000 and 2001 also indicated similar results D in Reading and D in Language Arts for both years. Trousdale County is a small rural school system, and it does not offer speech, drama, or debate in the youth curriculum. The students in Trousdale County need more opportunities to learn about and practice oral communication and written communication.

WHAT HAS BEEN DONE: Four hundred and ninety four students (494) are enroll in 22 4-H in the 4-8th grades. Educational programs are presented in the areas of parliamentary procedure, prepared speeches, extemporaneous speeches, oral presentations using visuals, and visual communication. Each student has several ways to expand his/her communication techniques during the 4-H programs in their school.

IMPACT: Students dempnstrating skills learned by participation in communication activities:

	Number	Percent of Students Enrolled
Public Speaking	400	81%
Project Demonstrations	356	72%
Art Posters	321	65%
Written Communication	222	45%

Teachers who responded to the communication assessment indicated that:

Over 75% of students increased their knowledge in the communication areas

Over 70% of students increased their skill level related to communication

Over 76% os all students demonstrated one or more communication skill through the communication program

Over 55% of the students indicated that 4-H Communication help them increase their self confidence

FUNDING: Extension

#

Title: Financial Management for Youth

ISSUE: Through meetings with School Guidance Counselors, JTPA and 4-H Advisory Groups, financial management is an essential program to prepare students for the Twenty-First Century. Little programming in the area of financial management is being conducted in area schools. Our

goal is to conduct financial management programs to 6th - 8th grade students in the county. Other reason for conducting this program is that West Tennessee continues to lead the state in number of bankruptcy filings. The main reason for this is mismanagement of funds, credit cards and over extension of funds. Lauderdale County has 454 families in the third year paydown. One way to begin curtailing this number of bankruptcy filing is to conduct financial management programs to reach students at a younger age before they become young adults with jobs. Also, this program will help students make the connections with having a good education and obtaining that good job in the future.

WHAT HAS BEEN DONE: After discussions with Lauderdale Middle School administration and guidance counselor, it was decided to conduct "Own My Own" simulation with 6th - 8th graders during the Spring. A rotational schedule was set up for two groups to come through simulation/hour. The first problem was how to do all the things to conduct the Simulation in an hour. No possible way. We then decided to have a pre-simulation meeting to pass out introductory information such as: pretending to be 25 years of age with no family, job descriptions, calculation of gross monthly income - taxes and insurance to get net income and to teach students how to write a check and record it correctly. Packets were taken up by teacher and redistributed on the day of "Own my Own" simulation in gymnasium. During the Simulation, FCE Club members, bank officials and extension agents worked individual booths. Neil Smith, 4- H Specialist for Western District, also assisted. Groups came through on an hourly basis through out the day.

IMPACT: Through this program, approximately 500 Lauderdale County Youth went through the "Own my Own Simulation. Students seemed to thoroughly enjoy the program. Through post follow-up surveys, eighty percent of students marked the following as to what they learned through the program: how to write a check, deductions taken out before you get your check, how much money it takes to live and that using credit cost more in the long run. They also checked this program helped them make the connection between occupation and lifestyle. Some comments made by students were: I enjoyed this opportunity to learn new things, when I grow up I want to make a lot more money, it was nice to see what the real world is like, this made me change my mind about buying the big stuff and that it was lots of fun and hope to do it again next year. Teachers are still commenting on the success of the program and how students are still talking about it and the same students that went through it last year want to do it again this year. Teachers also mentioned that there has never been a program conducted at LMS that has impacted students in such a positive way.

FUNDING: Regular Extension Funding/DSCC Development Enhancement Grant

#

TITLE: Citizenship and Leadership Development

ISSUE: Teacher surveys conducted at the end of the school year indicated a need for more educational programs in the area of Citizenship and Leadership development. Teachers indicated that two of the most valuable aspects of the 4-H program is the increase in the student's ability to perform leadership tasks and the self confidence developed through presenting demonstrations and public speaking. Advisory groups have also indicated a need for more community involvement among youth and more opportunities for leadership development.

WHAT HAS BEEN DONE: Service learning is an integral part of the Warren County 4-H program. Monthly Honor Club meetings provide as their focus a service learning activity thoughtfully organized and carried out by 37 Honor Club members. Honor Club members select their service learning projects for the year at the initial Honor Club meeting in October by brainstorming community needs. Each project is then organized by month so that Honor Club members can be prepared for the project. Projects conducted this year have included the following:

- Halloween Bags - 500 4-H Halloween bags were packed with candy and safety tips and delivered to every kindergarten student in Warren County. Honor Club members talked to the students about how to be safe when trick-or-treating
- Adopt-A-Child - Honor Club members adopted three foster children for Christmas and shopped for items on their wish list. A total of \$300 was donated by members to purchase items.
- Hands to Larger Service - Honor Club members successfully collected and delivered over 2000 toiletry items and cleaning supplies collected by 32 4-H clubs for the Nashville based Hospital Hospitality House.
- Humane Society - \$200 worth of animal food and supplies were collected and delivered to the local animal shelter.
- Valentine Bags - 37 Honor Club members donated fruit, candy and Valentine cards to place in decorated bags for residents in assisted living. The 175 bags were delivered on Valentine's Day. A 4-H member in the Arts and Crafts project hand painted each bag.
- Teacher Appreciation Gifts - Honor Club members prepared 100 candy filled bags with appreciation notes for teachers at the end of the school year.
- Landscaping - 10 Honor club members planted flowers in the landscaping at the Warren County Administrative Building.
- Children's Books - 29 members donated 225 children's books to the local Head Start centers.

IMPACT: The impact of the service learning activities on the youth involved included learning decision making skills, communication skills and possessing a concern for others. A total of 24 Honor Club members completed eight organized service learning activities and volunteered 384 hours towards their community. They also learned to work together as a group and responsibility for completing a project. The impact of each service learning activity and the pride they felt when each activity was accomplished will stay with them for a lifetime.

FUNDING: Supported through regular extension funds

#

TITLE: YOUTH AND COMMUNITY LEADERSHIP DEVELOPMENT

ISSUE: The Greene County 4-H Advisory Board has raised a concern that our youth need to become better citizens by increasing their understanding of their community's resources and rich history. They felt that 4-H was an excellent program for the youth to develop these abilities through their Sigma Lambda Chi group. By youth being involved in their communities, they will develop a sense of pride and feel they are a contributing citizen.

WHAT HAS BEEN DONE: Educational programs have been presented to the Sigma Lambda Chi members (7th-12th grade 4-H'ers) on leadership styles and work force preparation. Both programs were interactive and allowed the 4-H members to be involved and sometimes put in a leadership role. Service Learning has been an important part of this groups learning to better citizens. We have participated in a Heritage Trust service project, teens volunteered for the Greene County Youth Board this year, Kid's Day, Join Hands Day project for the local Food Bank, serving at the Farm City Banquet, helping with June Dairy Day, and a Walk With the President. We had a pot luck dinner for one of our meetings and had "Miss Manners" (Barbara Holt) come to be our guest speaker on how to properly conduct one's self in society.

IMPACT: Sixty-five percent of Sigma Lambda Chi members have participated in at least one or more Service Learning projects. 75 percent of these members said that they have increased their knowledge of the organizations in their community that are non profit. 94 percent said that it made them feel like they were worth while in helping their community. 60 percent learned something about their community's history while participating in the Walk With the President service project. 42 percent saw themselves becoming a community leader someday. 85 percent felt more prepared for their future by participating in Sigma Lambda Chi. Additional Comments from parents of Sigma Lambda Chi members:

" I am so glad that these kids have something like this to be involved in."

" I have noticed a change in my son, he is more willing to be involved without me pushing him to volunteer."

Comments from the 4-H members:

" I knew that people littered, but I never really thought about who picks it up. It makes me mad now that I see it from this end."

" This is the hardest work I have done all summer and I feel good about it. I am helping someone else."

" I am going to college, I don't want to have to be one that has to get food from the Food Bank."

FUNDING: General Extension Funds, Local Sponsorship, Tri-State Tractor and Wal-Mart Distribution Fund-raisers.

#

TITLE: Seeds of Service - Service Learning Projects

ISSUE: 4-H has long been dedicated to teaching youth to help others in the community. Now youth are being taught to not only do citizenship projects but to do Service Learning Projects. According to the National and Community Service Trust Act of 1993, service learning is a method whereby participants learn and develop through active participation in thoughtfully organized service that meet the needs of the community, foster civic responsibility, enhance the education component of the community service agency, and provides structured time for participants to reflect on the service experience. Through Service Learning youth help in the community and at the same time they learn from the experience.

WHAT WAS DONE: Projects were planned by youth and volunteer leaders that met the needs in the community. A variety of activities were plan and carried out. The 4-H Honor Club reached its goal to have at least one service project a month. Local clubs also did projects and reported in the club meeting. Some of the major projects were:

- * Children's Hospitals Fantasy of Trees - 52 youth made ornaments and decorated a tree which raised \$700.00 for Children's Hospital. Over 70,000 people viewed the tree.
- * Mission of Hope - 28 youth made 52 blankets for families in the Appalachia mountains to provided them with warmth for the winter. Photos of youth doing this project was used in the 4-H Conversation Photo Quilt.
- * Knoxville News Sentinel Empty Stocking Fund - 46 youth help fill food baskets that benefit families during the holidays.
- * Foster Children's Christmas Party - 77 youth set up activity booths for 300 foster children and families to enjoy during their Christmas Party.
- * Mobile Meals - 745 youth made 800 tray favors for the Office of Aging to be given to people receiving Mobile Meals. 14 youth helped do meal deliveries.
- * Knoxville Humane Society - 16 youth sold carnations and raised \$500.00 for the Humane Society. Each 4-H member also named an adoptable pet and was feature on television to help promote animal adoption.
- * Farms Day - Three Farm Day events were held to provided hands on activities for young people with the opportunity to see, touch, and learn about farm animals and about food we get from the farm.
- * Chick-fil- A Kids Night - 15 youth taught painting on pumpkins and did activities with kids during this community night.
- * Ronald McDonald House - Youth from several local schools made cookies for families staying at Ronald McDonald House. All cookies were homemade and tray put together by youth.

- * Project 911 - Local clubs planned projects they felt would help children in New York. A variety of things were done - Gifts were sent to children in classrooms of their same age, groups became pen pals, and one group sent stuffed bears to New York. Youth found ways they could do something to help.
- * Friends of the Library - 21 youth did story telling and read books at a local library to help children enjoy reading and using the library.
- * Second Harvest Food Bank - 52 youth planned, planted, and harvested a garden at their school. They donated 19 pounds of greens they grew to Second Harvest Food Bank.
- * Wheel Chair Caddy - 60 wheel chair caddies were made for the Veterans Hospital.
- * Knoxville Home and Garden School - Over 400 children visited the activity booth that 4-H member and Ijams Nature Center set up for youth visiting the show. 4-H members did demonstration and did educational games. Some of the types of smaller activities reported by individual youth were visit to nursing home, recycling project, planting flower, road side clean ups, and collecting food and clothing to donate.

IMPACT: Youth were asked to reflect how their activity was a benefit to the community, how the event was planned, how they carried out the planned event, how many people helped, and what they learned from the service project. The reflection was done through verbal reports and 21 written reports to the Annual Seeds of Service Activity Report. Of the written reports 2105 people reported volunteering 7429 hours valued at \$56,800.00. From the verbal reports 3080 youth reported on Service Projects.

FUNDING: Regular Extension Funds

KEY THEME - LEADERSHIP TRAINING AND DEVELOPMENT/VOLUNTEERS

TITLE: Farm City Day

ISSUE: Volunteer leadership is fostered through Franklin County's Farm City Day program involving more than 50 volunteers in an effort to educate approximately 500 kindergarten students and chaperones about the importance of agriculture and the many uses of agricultural commodities. This is an annual event prompted by the Franklin County Livestock Association, Franklin County Farm Bureau and UT Agricultural Extension Service who recognized a need to educate citizens about agriculture in our primarily rural community; thus fostering an interest and support of agriculture. This collaborative effort has proven to be a strength in our community. This event involves youth and adult volunteers.

WHAT HAS BEEN DONE: 2002 marked our seventh year for Farm City Day. As coordinator of the event, I keep the Farm City committee informed, send out correspondence to volunteers, commodity representatives, sponsors,

teachers and invited guests; coordinate 50+ volunteers to assist with bag stuffing, exhibits, food, tour guides, set-up, clean-up, petting zoo, etc. It is an educational event targeting approximately 500 kindergarten aged students and chaperones county-wide to experience life on a farm. Students tour a hog operation, beef/ nursery operation, 14 animal petting zoo, tractor exhibit, 12 Commodity exhibits, each child has their picture taken on a tractor for them to keep and a fly-by is performed by an aerial applicator as a highlight after lunch. It is regarded as the best educational field trip offered to our students.

This year, we incorporated bee keepers (4) into the commodity exhibits (as a result of our newly formed Beekeeper Association). We include Master gardeners (8) who prepare a garden spot to show and teach children where our food comes from. Five Master Gardener participants also served as Goodie Bag stuffers in preparation for the event. Two Master Gardeners and Farm Bureau Women serve as tour guides. Local FFA students assist with the petting zoo and tractor exhibit. Approximately 20 students in each of three shifts assist throughout the day giving them leadership opportunities and experience in seeing an event such as this take place. Local farmers volunteer to help at the farms.

IMPACT: Farm City Day is an awesome marketing tool for the Extension Service and Agriculture. It is well organized, respected, and eagerly anticipated each year. Teachers regard it as the best educational field trip offered.

- 478 kindergarten students and chaperones gained knowledge of agriculture in an effort to better understand where our food comes from.
- 386 kindergarten students took the pledge to be a conservation kid and learn more about protecting our environment. Hand prints were made by NRCS.
- 478 kindergarten students and chaperones learned to identify the basic animals found on a farm.
- 478 kindergarten students and chaperones gained an understanding how food is grown and harvested.
- Teacher comment: "This is a wonderful experience for the children! This field trip has such a strong educational value and provides a tremendous amount of enrichment!" Rachel Vincent/Townsend School.

FUNDING: Regular Extension funds, local business sponsorship

#

TITLE: VOLUNTEER DEVELOPMENT

ISSUE: There are approximately 175 registered volunteers with the Blount County

4-H program. Approximately 30 of these volunteers are extremely active in the program leading project groups, clubs, events, and activities. One major obstacle to involve more of the registered volunteers is communication. A newsletter is produced bi-monthly. However, a faster form of communication was greatly needed. Therefore, volunteers are being asked to submit their e-mail addresses. Upcoming events/and or deadlines are sent to the volunteers.

WHAT HAS BEEN DONE: Provided training for volunteers to conduct Honor Club, Workforce Preparation Camp, and Sigma Lambda Chi meetings. Provided location and activities for part-time volunteer who gives 40 hours of her time per month to the Extension office through the Maryville College Bonner Scholars Program. The part-time volunteer has begun producing a bi-monthly newsletter called Volunteer Visions. It has been met with an extremely positive response. Began county e-mail list serve to inform volunteers of upcoming events and activities.

IMPACT:

Stronger agent-volunteer relationships

Less overlap of programming

More sharing between volunteers

Stronger commitment by the few who are actively involved in the organization

Two 4-H parents have signed on as volunteers as a result of the e-mail updates.

Continue to work to improve organization of volunteers in Blount County.

FUNDING: Regular Extension Funds, Maryville College Bonners Program (Indirect)
Daily Times Grant

#

TITLE: Ornamental Horticulture/Master Gardener

ISSUE: Demand for horticulture information is constant in Giles County.

With recent changes in county personnel leading to limited resources, meeting the needs for this type of information will be more difficult without the help of trained volunteers. Since establishing a Master Gardener Program in 1999, 81 people have completed the course with 50% completing their certification requirements. Over 1600 volunteer hours have been realized as a result of participants in the program. Many of these hours helping with Extension programs. The agricultural advisory committee indicated a continuing need for the program.

IMPACT: Program implementation included conducting a 35 hour Master

Gardener (MG) class, establishing 2 educational and informational booths at the county fair and local lawn and garden show, conducting 1 county wide horticulture program on weed control, and maintaining 2 plant beds at the fair grounds. Master Gardeners assisted with other projects as follows: 8 demonstrated tree planting at schools for Arbor Day, 1 assisted with garden program for 4th grade ag-in-the-classroom educational program, 8 served as fair superintendents for garden and crops departments, and 2 met 4-H clubs.

End-of-program survey was used to evaluate the class of 10. 55% of participants indicated they learned how to take a soil test and control diseases/insects, 100% learned how to select/care for plants, and 78% learned how to use proper safety equipment and use pesticides safely. Overall 68% had poor or very poor knowledge of topics prior to class and 74% had good or very good knowledge after the class. Pre and post test indicated that 36% of participants increased their knowledge of lawn care, 67% increased knowledge of insects, 54% increased knowledge of pesticide safety and 27% increased their knowledge of soil management. In a recent survey MGs adopted the following practices: pruning trees, soil testing, over seeding lawn, composting, using pesticides safely, and proper irrigation. One participant indicated that the changes he made as a result of the class improved the value of his home and property by \$8000. Thus far for 2002, 216 volunteer hours have been reported. Valuing hours at \$16.05 that is a total of \$3466 worth of volunteer time to the Extension Service. Since 1999, 90 MGs have given 2733 hours which are valued at \$43,864. MG association sponsored a meeting to the general public in which 35 participants improved knowledge of weed control by 88%. Minority participation in MG class was 20%. Evaluation comments included "I completely enjoyed it, and would suggest any home owner take the class", "Classes were very infomrative. Would recommend to others.", "I think anyone who likes to do gardening of any type would get a lot out of this class." "Overall I have learned a lot. The classes were all interesting and informative."

FUNDING: The program was funded through regular Extension funds. \$475 of registration fees were collected for Master Gardener class.

#

TITLE: Volunteer Leader Development

ISSUE: Expansion of the county and district volunteer leader base is essential to the advancement of the 4-H Program. The 2001 ES237 report shows a 4-H enrollment of 32,549 in the Western District. This compares to 26 4-H

positions facilitating the program, following the recent staffing plan. This calculates to a ratio of one agent position for every 1252 4-H members. The ES237 report also indicates 1765 adult volunteers assisting in a variety of roles with the 4-H audience. Surveys and interviews with 4-H Agents, members of the District Volunteer Leader Organization and other County Volunteers reveal that volunteer leaders are under-utilized on the county and district levels. Research also acknowledges many ôrisky behaviorsö young people become involved in could be greatly reduced with a caring adult becoming involved in a childÆs life.

IMPLEMENTATION:

- Wrote, edited and distributed four issues of The Volunteer: a newsletter for the Western District Volunteer Leader. The newsletter was mailed quarterly to 52 adult volunteers representing each Western District county and sent electronically to County Extension Staff for local distribution.
 - Conducted the Strategies For Volunteerismö roundtable discussion with teen and adult volunteers from across West Tennessee.
 - Presented a summary of district and state 4-H Horse Project events and activities to a group of over 25 parents and adult volunteers in Hardeman Co.
 - Presented a summary of Junior 4-H Camp and answered questions with a group of 15 parents and volunteers in Fayette Co.
 - Assisted with 4-H Camp leader training in Madison and Crockett Counties.
 - Assisted representative of State 4-H Volunteer Leader Committee and State 4-H Staff member in charge of Volunteerism with site selection for 2002 State Volunteer Leader Forum.
 - Added Adult Volunteer Leader to Western District 4-H All Star Council. The representative will assist with planning and implementing All Star events and activities, as well as serve as a liaison with the district officers.
 - Met with local adult volunteer leader interested in establishing a college scholarship for Western District 4-H All Stars.
 - Recruited volunteer leaders to assist with District Spring Achievement Day and District 4-H Horse Bowl & Hippology Contest.
 - Assisted with orientation sessions for public speaking and poster judges at District Spring Achievement Day, and reviewed roles of scorers at District Hippology Contest.
 - Attended 2002 Southern Region 4-H Triennial Conference in San Antonio Conference. Attended seminars on volunteer recruitment and management.
 - Identified and contacted five pilot counties willing to assist with developing a model for volunteer recruitment, training, utilization, management, recognition and evaluation.
- Serve on State 4-H Inservice Training Planning Committee. Assisted with development of guidelines for Basic Volunteer Development training.

- Recommended volunteer leader involvement with workforce preparation initiative in the counties.
- Encourage new and reassigned agents to establish or expand volunteer leader groups in their respective counties.

IMPACT:

- Over 250 adult volunteer leaders, parents and teachers increased their knowledge of 4-H events and activities as a result of receiving the Volunteer newsletter.
- Nine adult and teen volunteer leaders participated in the "Strategies For Volunteerism" roundtable discussion. The leaders identified program needs, volunteer roles and resources needed to expand volunteerism on the county, district and state levels.
- Over 25 parents and adult volunteers expanded their knowledge of the 4-H Horse Project and for starting a project group, as a result of the county-level training in Hardeman Co.
- A group of 15 parents and volunteer leaders learned more about the requirements for attending Junior 4-H Camp due to county-level training in Fayette Co.
- A total of 14 teen and adult leaders for 4-H Camp increased their knowledge of the 4-H Center and their duties following six hours of training at the center in Milan.
- A \$500 Seeds of Service Grant was awarded to the Western District All-Stars. The adult volunteer leader added to the District Council was responsible for completing the application process.
- A \$250 college scholarship was established for Western District 4-H All Stars. A local adult volunteer leader is supplying the funds for the scholarship.
- The 2002 Western District 4-H Horse Bowl and Hippology Contests would not have been possible without the assistance of the over 25 adult volunteers involved in such tasks as scoring, room monitors, contest officials, organization, etc.
- 91% of the counties completing the "On My Own" simulation used volunteers as assistants at the ten stations. Previously, most agents facilitating the simulation had asked other agents to come and assist.
- Five county 4-H Staff members have agreed to participate in additional volunteer management training and serve as models for expanding volunteerism in the Western District.
- Judging team registration forms (Form 615) show a 15% increase in teams being coached by volunteers.
- Informal surveys with 4-H Staff indicate a greater involvement of volunteers with 4-H programming.

FUNDING: UT Agricultural Extension Service

#

TITLE: Volunteer Development

ISSUE: The main purpose of involving volunteers in the 4-H youth program is to build diversity in programming, enhance the quality of the educational experience and to provide learning opportunities and experiences to a larger number of youth.

WHAT HAS BEEN DONE:

- Eight counties identified Volunteer Development as a planned program and were visited to identify needs they may have to develop or implement their program (position descriptions for volunteers, recruiting, publications, training sessions, guidelines, marketing tools, etc.)
- District Volunteer Leader Forum was held November 16-17, 2002

IMPACT:

As a result of the county visits:

- A handbook for volunteers is being developed based on the needs identified by agents and volunteers. Once completed, it's effectiveness and use will be evaluated.

As a result of the district leader forum:

- 100% of the volunteers attending the volunteer leader forum expressed they learned about additional opportunities 4-H offers for youth and volunteers. This knowledge will:
 - allow them to increase the variety of learning experiences offered to members.
 - allow them to increase their personal skills by participation in additional training opportunities for volunteers
- Seven of the 12 volunteers that attended the S.O.S Grants session offered at the leader forum expressed they have a better understanding of the process required for a "service learning" activity and plan on involving more members in service learning projects.
- Five of the volunteers attending expressed realizing the importance of involving teens more (as facilitators and mentors for younger youth.)

- Two volunteers would like to be members on the District 4-H Volunteer Council so they can assist with planning and implementing future training sessions for other volunteers in the district.

FUNDING: Extension

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TITLE: Adult Volunteer Leadership of the 4-H Horse Project

ISSUE: During the 2001-02 year more than 190 youth were enrolled in the 4-H Horse project in Sullivan County, Tennessee. This project has the largest enrollment of any agricultural project in the county. The 4-H agent with responsibility for this project has no experience with horses or the horse industry so volunteers with the proper knowledge and experiences must be utilized to effectively teach youth enrolled in the project.

WHAT HAS BEEN DONE:

To conduct 4-H Horse Project activities, key adult volunteer leaders have been identified, selected, oriented, trained, utilized, recognized and evaluated. These volunteers conduct monthly club meetings; lead judging practices; teach educational programs; organize farm visits and other trips, oversee fund-raisers, secure resources and financial support, and care for and encourage 4H members. The 4-H Agent communicates closely with these volunteers to: provide pertinent information about contests, activities, and opportunities; help solve problems; evaluate strengths, weaknesses, opportunities, and challenges; and encourage and recognize leader and member achievements.

IMPACT: Sullivan County had 31 members participate in 4-H Horse Judging, Hippology, and/or Horse Bowl meetings, practice sessions, and competitions this year. The depth of involvement and success of the Sullivan County 4-H Horse program is a tribute to the volunteers who contribute their focused efforts on the implementation of this educational programming.

The senior Hippology team won first place at the state contest earning the right to compete in regional and national contests. At the Southern Regional 4-H Horse Championships Hippology Contest in Memphis, the team placed 6th in the Written Exams, 6th in Educational Stations, 1st in Judging, placing 6th place in overall competition. Individually, members placed sixth and eighth. The team placed 9th in Team Problem Solving at the Eastern National 4-H Horse Roundup in Louisville, Kentucky.

In Horse Judging, the senior high team won second place in district

competition out of 10 teams with team members placing second and seventh in individual competition. At the State 4-H Horse Judging competition, the Sullivan County senior team placed 3rd in overall competition and 2nd in the Performance Judging category which earned them the privilege of competing at the Southern Regional 4-H Horse Championships Judging Contests in Memphis. The Senior Judging Team was also invited to compete at the American Quarter Horse Youth Association World Finals in Fort Worth, Texas where they earned 8th place in presenting Oral Reasons, and 7th High Team Overall. The team also competed in the Celebration Horse Judging Contest in Shelbyville, Tennessee and The American Quarter Horse Association World Congress in Columbus, Ohio.

Much of the work and inspiration for this group has come from one volunteer. This year that volunteer has also been working to multiply their efforts and has recruited additional volunteers to assist with club events and activities and has worked with the 4-H agent to develop job descriptions for these volunteers who will help expand the size and scope of the Sullivan County 4-H Horse program.

Funding Sources: Regular Extension

#

TITLE: Leadership Humphreys County

ISSUE: The county Chamber of Commerce Executive Director expressed the need for leadership development programming in order to maintain the Tennessee Governor's 3 Star status for county economic development. Humphreys County is in the midst of growing with a need for organized volunteerism. A leadership program needed to be established to identify potential leaders and to address county and community needs. The Leadership Humphreys program is designed to develop leaders that represent the people and know how to keep them involved as well as an ongoing vision of future needs. Leadership Humphreys involves all persons interested in improving their lives and the quality of life in their community. Leadership team and individual projects can give back to the county community involvement that will improve quality of life for families. The leadership program reaches all communities in the county and is open to all residents who are interested in improving their leadership skills in order to give back to their community.

WHAT HAS BEEN DONE:

Extension Family and Consumer Sciences Agent collaborated, as Co-Director, with the Humphreys County Chamber of Commerce Executive Director to

organize and execute the Leadership Humphreys County program. For the past five years we have networked annually with an average of 95 sponsors and program presenters including businesses, agencies, law enforcement, industry, city, county and state governments, social services, black history, agriculture, economic development, health and education. Each year program topics include Humphreys County Historical Perspective including Black History, County and State Economic Development (conducted at the Bell South Building in Nashville), Health Services, City and County Government, Judicial System, Social Services, State Government (State Capital visit with Senator and Representative), and Education. The program is also directed by the 14 member Board of Directors that meets monthly. Leadership Humphreys is funded by participant employer and sometimes by the individual. Scholarships are available from FCE County Council , Leadership Humphreys Alumni Association and interested individuals. Youth Leadership Humphreys was developed in 2002 to include a six month educational program with graduation.

IMPACT:

- * In five years 68 program participants have graduated from Leadership Humphreys.
- * Networked and collaborated with an average of 95 sponsors and program presenters.
- * Humphreys County Executive sponsors any county employee and County Commissioner who wishes to participate in the Leadership Humphreys program.
- * DuPont industry sponsors 3 or 4 employees annually. They also donated program materials and promotional items.
- * Leadership Humphreys conducts fundraisers to assist with the support of the program. The Board has raised over \$10,000 from 3 fundraisers.
- * Twelve High School Juniors and Seniors have been accepted into the Youth Leadership Humphreys program.
- * FCE County Council has sponsored 6 scholarships at \$200 each for Leadership Humphreys. They also sponsor and prepare the meal for the October Historical Perspective program.
- * Each month's meeting is covered by the local newspaper and articles are written by program participants.
- * Team Projects completed within the program year include:
 - Drug Awareness Program - members surveyed all 7th and 8th graders in the county on the topic of drug and alcohol awareness and participated in the Red Ribbon Week activities.
 - Humane Society - secured a grant to hire a part time employee for the county animal shelter and to improve the physical facility. Conducted a county wide promotion to inform public of the animal facility. Networks with a local vet to care for the animals.

- Developed a County Resource Directory collaborating with the county Health Dept. and Health Council.
- Conducted a study concerning the proposed Hwy. 13 S. four lane resulting in an awareness campaign.
- Established a county-wide youth activity web site which can be accessed through the Chamber of Commerce. Web site feature organized youth activities to inform youth what is available in the county.
- Conducted a fund-raiser to assist the Humphreys County Library with the purchase of a computerized circulation program. Raised over \$2000 that was matched by a grant.
- Conducted a study and organized a Board of Directors for the first county Habitat for Humanity project. Team members are board members and continue their interest in this project and are working on the next level of the Habitat project.
- Designed and built a Christmas Float and collected canned goods along the parade route for needy families in the county.

Comments from the class members:

"I never knew that Humphreys County had so many resources. I have lived here all my life and have learned so much about the people and resources".

"I have been looking for a project to get involved with and after going through leadership I now see where some needs are".

"I have learned the connection between the county and the state economic development office. It takes a lot of work, networking and time to bring industry and businesses to the county".

FUNDING: Fee-based program, DuPont, FCE County Council, Banks, Scholarships, Regular Extension funding.

#

TITLE: VOLUNTEER DEVELOPMENT

ISSUE: Volunteers have traditionally been used to assist in the development and delivery of extension programs. While the majority of extension volunteer usage over time has been associated with youth development programs, specifically 4-H, there has been a growing trend toward using well-trained volunteers to deliver educational programs in a number of other extension subject matter areas. Extension Family and Community Education (FCE) members provide volunteer services in subject matter areas related to family and consumer sciences. Trained extension master gardeners commit volunteer time to provide answers to requests for home horticulture and gardening questions in county extension offices. The use of trained

volunteers in these and other situations helps stretch extension resources in delivering effective educational programs. It has been determined that fresh fruits and vegetables are nutritional and can reduce and prevent disease, cancer, and diabetes. Studies have shown that people who eat fresh fruits and vegetables and exercise, in most cases, lead a healthier life.

WHAT HAS BEEN DONE: The Shelby county program advisory committee recommended continued participation in Memphis Urban Garden Program (MUGP). As a result, the extension agent developed a MUGP marketing brochure and made TV appearances to market the Urban Garden program. Presentations were made to Memphis City Beautiful Commission to replace empty vacant city lots with community vegetable gardens. The city of Memphis provides \$41,000 annually to support the urban gardening program in Memphis. Forty-two volunteers, including a 24 member advisory committee assist in the leadership and implementation of the MUGP. Quarterly educational meetings are conducted in the areas of vegetable production and nutrition. Visits were made to City of Memphis Housing and Community Development office, which sponsors MUGP funds on a regular basis. Educational events and activities were planned to keep participants interested and trained.

TSU Extension agents in Rutherford, Lawrence, Franklin and Dyer counties provided training for several dozen volunteer Master Gardeners.

IMPACTS: The City of Memphis continued to provide funding(\$41,000) to support the Urban Garden Program. In 2001-2002, 1,350 participants were enrolled in MUGP. Fifty volunteer leaders assist with planning and implementing MUGP. Because the majority of gardeners are over 65 years of age, the Extension agent believes that eating fresh fruits and vegetables from their gardens and exercise contribute to their longevity. Seventy-five gardeners participated in a leadership development program. Fifty gardeners participated in educational meetings related to nutrition and production of fruits and vegetables. Seventy gardeners participated in the vegetable garden judging contest. Over 200 gardeners exhibited fresh fruits and vegetables in the fresh fruit and vegetable canning contest. One-half million dollars is saved by gardeners in food costs as a result of the Memphis Urban Garden Program.

The Home Horticulture Programming Team composed of TSU county extension agents and the home horticulture extension specialist offered several educational workshops throughout the state. Home Garden demonstrations were conducted in Davidson, Franklin, Shelby, Hardeman, Lawrence, Rutherford and Dyer counties. The Master Gardener training program was offered in Franklin, Dyer, Lawrence and Rutherford counties and trained 115 volunteers. These volunteers contributed 2,650 hours of volunteer time by providing educational information, materials or programs in their communities.

FUNDING: USDA/CSREES, TSU Cooperative Extension Program, and City of Memphis.

KEY THEME - CHARACTER/ETHICS EDUCATION

TITLE: CHARACTER COUNTS!

ISSUE: The Education Edge Steering Committee is involved with community activities which help build skills and qualities necessary for success in today's world. CHARACTER COUNTS! has been adopted as the avenue to provide character education in Dickson County. EE is supporting ongoing efforts to saturate the both the school and business community with character education. Training and support is necessary to help schools and employers model and encourage good character.

WHAT HAS BEEN DONE: Extension facilitated training for four different groups during 2002. Two community leaders were trained to assist the Extension Agent with portions of the presentation.

IMPACT: The following received in depth training on CHARACTER COUNTS!:
23rd Judicial District Child Support Staff of the District Attorney
General's Office - 12 individuals - 6 hours
Dickson County FCE County and Club Citizenship Education Leaders - 12
individuals - 3 hours
Dickson County High School Faculty - 80 individuals - 6 hours
Creek Wood High School Faculty - 45 individuals - 6 hours

Participants stated that the training sessions gave them a good understanding of the need for character education and how to implement the CHARACTER COUNTS! philosophy in their workplaces and community. The two high schools have used the CC! philosophy to develop policies for in-school activities. The County FCE Council utilized CC! as the theme for six educational exhibits at the County Fair which were seen by approximately 5,000 people. Materials from the exhibits were then donated to elementary schools.

FUNDING:

In addition to regular Extension funding, some training and promotional materials were provided with funding from Education Edge, from the Attorney General - 23rd Judicial District, and from the Dickson County Family & Community Education Council.

#

TITLE: Character Education

ISSUE: The need for character education for the youth in Shelby County

between the grades of 4th-12th was identified by the Shelby County 4-H Volunteer Leaders Association and the 4-H Overall Advisory Council. The Shelby County and Memphis City School System each expressed concern for the overall behavior of the students in the classroom and outside environment.

WHAT HAS BEEN DONE: A total of 6 character education programs were implemented in 14 schools over a six month period. Topics focused on responsibility, respect, caring, fairness, trustworthiness and citizenship. Over 3,000 youth were educated on the importance of character through this program. A variety of methods were used to deliver the 6 pillars of character. Methods included hands-on activities, skits, discussion and group sharing. The following activities were implemented to ensure the students involvement in each program: newspaper creativity, citizenship board game, responsible decision making small group discussion, Pedaling to Character skit, caring community service project and trustworthiness discussions.

IMPACT: Program impact was measured by observations, end of program surveys, pre/post tests, and third party observations and end of year surveys (teachers). The following conclusions were drawn from the observations.

-55% of students were able to identify 1 example of respect and participated in creative newspaper activity.

-90% of students participated in citizenship board game which focused on community service, know your government and leadership.

-60% of students were able to identify a situation and respond responsible to the situation as a group.

-831 students participated in the caring service project (collect cans for the Memphis Food Bank.)

60% of students were able to list 1 example of trustworthiness.

50% of students identified fairness in the "Pedaling to Character" skit.

40% of students were able to list at least 3 out of 6 pillars of character.

68% of students showed an improvement in character.

4-H participants demonstrated their knowledge of character issues by

delivering speeches relating to the six pillars of character.

4-H participants demonstrated expressed their ideas of character through the poster art contest.

FUNDING SOURCE: General Extension Funds

#

TITLE: CHARACTER COUNTS! in Giles County

ISSUE: Interviews with school guidance counselors and the Director of Schools revealed poor adoption of character education in the Giles County School System. The Extension 4-H Agent conducted a survey of 120 6th graders in a Giles County school. The students were asked to name a "person of character." Less than 30% identified an adult role model in their lives such as a parent, grandparent, or teacher. About 10% identified an American leader such as President George Bush. The majority identified a student in their school (50%) or could not understand the question (10%).

The County 4-H Advisory Council identified character development, especially citizenship and leadership, as major needs among the county's youth. Research by extension educators and specialists in Virginia, South Dakota, Louisiana, and Kentucky indicates that exposure to the CHARACTER COUNTS! (CC!) program has reasonable and encouraging impacts on youth character. Specifically, researchers found that exposure to CC! was positively correlated with youth behaviors (i.e., volunteerism and honesty) and attitudes thought to be held by individuals of character. Giles County does not offer a comprehensive character education program for youth.

WHAT HAS BEEN DONE:

The Agent planned a Leadership and Character Development Camp for 6th, 7th, and 8th grade youth with teens and adults assuming key leadership roles in planning and conducting camp. The Agent also conducted a teacher inservice for the Giles County Public Schools

IMPACT:

The Giles County 4-H Leadership Camp involved 15 teen and adult leaders teaching leadership skills to 30 6th, 7th, and 8th grade youth. Surveys conducted at the close of camp revealed that:

94% learned more about being a good citizen.

87% gained self-confidence at this camp.
100% worked as part of a team at camp.
100% learned about being a good leader.
100% plan to do more in 4-H.

In addition, when asked to name the most important thing learned at camp, 46% said "to be a leader" and 23% indicated a character trait such as responsibility, respect, friendship, and determination. Of the participants, 9% indicated the most important thing they learned was to "treat everyone equal."

In 2002, UT Extension Agent Joseph Donaldson was identified to school principals by the Giles County Director of Schools as the system's preferred provider of character education information and training. Donaldson trained 34 teachers in the CHARACTER COUNTS! program in August 2002. Teachers were asked to rate how helpful the training was to them on a five-part scale where 1 indicated "not applicable" and 5 indicated "helpful." The teachers indicated that the training helped them to:

Explain the CC! movement (4.91).
Describe how CC! makes an impact for youth (4.94).
Utilize the "Six Pillars of Character" to build stronger character in youth (4.82).
Gain new ideas for teaching character (4.82).

100% of teachers (N=34) indicated that they will use CC! in their classrooms this year. Some of the implementation strategies planned by teachers included: conducting character education role plays, displaying the six pillars in their classroom, and plans to counsel youth utilizing the "Six Pillars of Character".

Written comments from teachers included:
"Great ideas for classroom."
"Interesting-fun-motivational-informative."
"[I plan to] make my own character better."
"Terrific workshop."
"I plan to role play more with the Pillars of Character."

The Agent assisted the Giles County Board of Education in applying for a \$25,000 character education grant from the Tennessee Department of Education (status pending). The Agent pulled together 10 community leaders, including the County Executive, to form the county's CC! coalition.

FUNDING: Camp was funded by a \$1500 Seeds of Service grant that was matched dollar-for-dollar with local contributions. Other initiatives were funded by regular Extension funds.

#

TITLE: LIFESTYLE CHOICES, CHARACTER EDUCATION and LIFE SKILLS ISSUES:

ISSUE: Violence is a growing public health issue. Though violence by and against children is declining nationally, recent outbreaks of violent behaviors by teens have pushed this issue to the forefront. In 1996, 944 juveniles were arrested for violent crimes in Tennessee. Much of the youth violent behavior is associated with the use of alcohol and other drugs and with gang involvement. According to the Children's Defense Fund, development of extracurricular and after school programs that fill the hours when juvenile violent crime peaks (3-7 p.m.) with positive activities and caring adults can limit opportunities for lawbreaking and can promote academic and personal achievement of participants. Programs that teach principles of positive lifestyle choices, character education, and development of life skills may help reduce the incidents of violent behavior. Such programs showed significant effects on the behavior of youth offered by the TSU extension specialists and county extension agents in Davidson, Crockett, Hamilton, Lauderdale, Lawrence, Henderson, Rutherford, Sumner and Shelby counties. In Henderson County the teen pregnancy rate was 19.2 in 1998. The rate increased to 22.4% in 1999. The juvenile violent crime arrest rate was at 26% last year. Low self-esteem and a decline of the family unit were major concerns of advisory groups.

WHAT HAS BEEN DONE: In Henderson County five parenting classes were taught to four Head Start parents to increase their knowledge of basic parenting skills. Five news articles were written to stress building character in the community. Six pillars of character (respect, responsibility, trustworthiness, fairness, citizenship, and caring) were taught in summer day camps at seven sites in the county. Eighty-two youth were involved. Thirty after-school youth learned character through hands-on activities at two housing project sites. Seventy-three mother/daughter participants were enrolled in *Girl Talk* classes and were taught to help young girls increase their self esteem. *Talking with TJ* (a self esteem building curriculum) was taught to 3rd grade classes to increase self-esteem and fairness. A financial management class was taught to 11 low-income families to help them to increase their knowledge and skills of money management. Fifteen day-care providers participated in a Character Counts training to use in their centers.

RESULTS/IMPACTS: Statewide, 12,500 youth participated in various youth development activities as a result of TSU Cooperative Extension programming.

In Henderson County, an evaluation survey of 90 children who participated in character building activities showed that 27 children learned character skills and had made a commitment to themselves that they would not cheat on exams. A evaluation survey of 11 parents of youth who participated in summer day camp, showed that 11 children learned some character skills. In

other counties, 468 youth, enrolled in after-school activities and summer day camps learned about character skills through hands-on activities. Seventy-three mother/daughter teams learned to respect their bodies and used better communication skills with each other. Eighteen day care providers learned methods they could use to teach character in children. Twelve participants in a youth exchange with seniors activity learned to respect each other and to be responsible for their partners.

FUNDING: USDA/CSREES and TSU Cooperative Extension Program

KEY THEME - PARENTING AND CHILD CARE

TITLE: Parenting Apart: Effective Co-Parenting

ISSUE: Tennessee has one of the highest divorce rates in the nation. Overall, children whose parents divorce have higher rates of emotional problems, academic problems, and engage in higher risk behaviors than do children of intact, two-parent families. The state has passed legislation requiring divorcing parents of minor children to complete at least four hours of parent education related to issues around divorce with the goal of reducing the negative impact of divorce on children and reducing conflict between parents about issues related to the children.

WHAT HAS BEEN DONE: The Extension Specialist provided 6 hours of inservice training in each district across the state to update agents on the latest research and programs available for parent educators working with divorcing parents. The participant manual was updated to reflect the most recent research related to children and divorce. Evaluations of the program and follow-up evaluations of a random sample of participants were conducted to determine program effectiveness and impact. Six new agents were trained in how to conduct the program.

IMPACT: In 2003, agents in 60 counties across the state provided the program "Parenting Apart: Effective Co-Parenting," generating over \$107,249.50 in participant fees that were divided between the counties and UT FCS programs. Nearly 4300 individuals participated in the "Parenting Apart" classes. Evaluations from 2972 participants showed the following:
* Participant satisfaction: Over 90% of participants agreed or strongly agreed that the class was worthwhile, that the class addressed the problems of divorce, that the printed materials were useful, and that they would recommend the class to others.

- * Knowledge: 90% or more agreed or strongly agreed that they learned about the value of the parents cooperating for the sake of their child, the importance to the child of a meaningful relationship with both parents, and increased understanding of the divorce process.
- * Attitude: Participants reported a significant decrease in the level of resentment at having to attend the class (M=2.41 prior to class and M=1.71 after class, n=2744, p=.000).
- * Skills: 91% agreed or strongly agreed that they learned communication skills they could use with their ex-spouse and children.
- * Aspirations: 90% indicated that they agreed or strongly agreed that they would plan to work with the other parent in the best interest of their children.
- * Behavior: Participants in the follow-up evaluation (n= 74) indicated significant decreases from before the class to three to six months after completing the class in asking the child about the other parent (using the child as a spy), arguing in front of the child, and complaining to the other parent in front of the child.

FUNDING: Participant fees (\$25.00 per person)

#

TITLE: Before You Tie the Knot: Premarital Preparation Seminar

ISSUE: Tennessee has one of the highest divorce rates in the nation. Because of the negative repercussions of divorce on children, adults, and communities, the state legislature passed a bill encouraging couples who want to purchase a marriage license in Tennessee to take a premarital preparation course. Those who complete at least four hours of an approved course will receive a discount of \$60 off their marriage license fee. The purpose of this legislation is to help couples become aware of the skills needed to maintain a strong marriage with the possible outcome of reducing the divorce rate.

WHAT HAS BEEN DONE: The Extension Specialist worked with The University of Florida Cooperative Extension to adapt their premarital preparation course, "Before You Tie the Knot," for use in Tennessee. The Specialist conducted training in marriage preparation education in each district of the state in the fall of 2002 using the new curriculum.

IMPACT: Fifty eight agents attended the inservice training across the state. Agents indicated significant increases of knowledge in the following areas as a result of the training (possible ratings range from 1 - 5):
Basis for the marriage education movement from a mean of 2.8 to a mean of 4.3

Role of Extension FCS agents in the marriage ed. movement from a mean of 2.6 to a mean of 3.9

Comfort in facilitating marriage education curriculum from a mean of 2.6 to a mean of 3.9

How to form a family strengthening coalition from a mean of 2.3 to a mean of 3.6.

They gave an overall rating of 4.4 out of 5 points for the training.

As a result of the training, 30% of agents attending indicated they would seek to provide marriage preparation education in their communities and 67% indicated they might seek to provide this program.

7% of agents indicated they would seek to conduct train-the-trainer sessions in marriage education, and 81% indicated they might do train-the-trainer.

28% indicated they would form a family strengthening coalition or incorporate it into existing coalitions, and 60% indicated they might form a family strengthening coalition.

FUNDING: Regular Extension funding, fees of participants when the program is implemented.

#

TITLE: PARENTING , NUTRITION EDUCATION and CHILD CARE ISSUES:

ISSUE: In 1995, in Tennessee, there were 6,520 children under the age of 18 years in foster care. The state ranked 12th in the United States in teen birth rates and ranked 48th in collection of child support payments. In 1998, there were 10,045 confirmed cases of child abuse or neglect. Tennessee ranked 4th in the nation in 1995 in the area of divorce rates. Research shows that about 85 percent of all children who exhibit behavioral disorders in the United States come from fatherless homes. The director of Education Programs at the Davidson County Sheriff's office indicated a need for the TSU family life extension specialist to train male inmates about the value of nutrition and the importance of effective parenting practices. Improved parenting and childcare skills might help to reduce these multiple risks for Tennessee children. Obesity in adolescents also has been identified as a critical problem facing low income families.

Currently, youth ages 5-8 are not afforded an opportunity to participate in the Tennessee 4-H Youth Development Program which involves young people, ages 9-19. Youth participate in the regular 4-H program through clubs, special interest projects, after-school programs, campus and many other activities. Extension agents and volunteers alike have all been supporters of

expanding the 4-H program to include youth, ages 5-8. Several counties have, in fact, adapted programs from other states to satisfy this void in the Tennessee 4-H Youth Development program.

In Lauderdale County lack of parenting skills, teen pregnancy and high youth drop-out rates are critical issues. Low employment rates for many of these young families pose a real problem. A lack of family strength, abuse, violence, neglect, lack of family support, low levels of education, and high rates of female heads of household (35 percent) place additional burden on families. In 1999, Lauderdale County ranked number one in the state with the highest teen birth rate. Seventeen percent of children are also in state custody.

WHAT HAS BEEN DONE:

Seven volunteer staff members of the Sheriff's Office were trained at the Davidson County Sheriff's office by the TSU Cooperative Extension family life specialist to conduct pilot-training with the male population in the areas of nutrition, consumer education and parenting. Classes began in June 2000 for six weeks. Subsequent classes have been conducted every six weeks (two at a time). Each class had 12-14 participants in attendance. In 2001-2002 a total of 42 male inmates participated in this training.

Through a special needs USDA grant, the family life extension specialist, in cooperation with the Meharry Medical College, conducted a study of obesity in young children, their eating habits and its effect on their grades in the school. Along with data collection, appropriate information on foods and nutrition was provided to the families.

Education for youth and adults to help them learn effective decision-making and communication skills were offered by the TSU extension specialist and county agents in Davidson, Crockett, Henderson, Lauderdale, Shelby, Hamilton and Cheatham counties

In Lauderdale County, parenting education programs were taught bi-weekly to parents of juvenile delinquent children - five classes with 10 parents. The *Baby Think It Over* curriculum with infant simulator was used in junior and senior high school health, family and consumer sciences, and child development classes - 100 teen girls were enrolled in these classes. Follow-up consisted of Resource Mother Group weekly home visits.

IMPACT:

Forty-two Davidson County male inmates participated in the program. Pre- and post-tests were given to measure change in knowledge of nutrition, consumer awareness, and effective parenting. The participants demonstrated that they acquired knowledge of food purchasing, preparation, and eating habits. The participants also learned the value of utilizing positive parenting skills with alternatives to spanking and yelling at their children. They indicated in their evaluations that they learned the importance of effective communication with children and the importance of building parent-child relations. Feedback from the Sheriff's Office indicate

they wish to continue this program. The Extension specialist will also provide training and encourage adoption of this program in other counties.

Impacts of the Cloverbud 4-H program were obtained from a written survey designed to measure the behavioral change of young children (age 5-8 years) over the period of participation in the program. Six pilot counties utilized the Cloverbud curriculum and returned the surveys. The surveys revealed that more than 285 youth, ages 5-8, participated in the program. Counties also reported that participants gained 75% to 95% improvement in their socialization, emotional and cognitive skills.

In Knox county the Cloverbud program was offered primarily to home schoolers where more than 50 youth completed the entire Cloverbud Agriculture Activity Guide. In Knox County this group also has begun using the Cloverbud Personal Development Activity Guide. Rhea County reported that the youth participants improved their physical, cognitive, emotional, and socialization skills in science between 90 percent and 100 percent. Rhea County recommends additional activities in the area of science for teen mentors to use with younger youth. An overall composite of the counties surveyed revealed that through their observation of youth participating in the program, more than half of the youth have improved their team participation skills and have shown a greater improvement in their willingness to share with other members of the group.

In Lauderdale County, as a result of the Strengthening Families programs, 100 percent of teen mothers returned to school (reduced drop-out rate). The teen pregnancy rate was reduced from number one in the state to number twelve. Pregnancy prevention classes are being taught in schools. There have been no known pregnancies reported in junior high school for the last two years. Mothers/guardians of teens cooperate to help teachers implement the use of *Baby Think It Over* curriculum.

FUNDING: USDA/CSREES and TSU Cooperative Extension Program

#

TITLE: Human Development

ISSUE: Divorce rates in the United States have tripled since 1960, doubled since 1970, and have leveled off at a high rate. It is estimated that as many as 60% of recent marriages are likely to end in divorce. Divorce affects more than three million people annually. Within three to five years, 75% of divorce mothers and 80% of divorced fathers will remarry. This class was mandated by the state where a permanent parenting plan is or will be entered each parent shall attend a parent educational seminar as soon as possible after filing of the complaint. The class shall educate parents concerning how to protect and enhance the child's emotional development and inform the parents regarding the legal

process. This class shall be conducted in a four-hour session. There is a fee for attending this class. Such fees are waived for indigent persons. This class is to educate parents about the impact of divorce, separation and conflict on their children and to offer concrete actions that parents cant take to help assist their children during the difficult time in their lives.

WHAT HAS BEEN DONE:

There were over 71 participants in the Crockett County Co-Parenting classes. Those participants came from our 28th Judiciary District which included the counties of Crockett, Gibson and Haywood Counties. Crockett County Extension Office were able to benefit from this program in two ways: (1) in which participants were charge in order to receive this class with a fee of \$25.00 which, \$12.50 stayed in the county and \$12.50 went to the University. Class goals focused on to give parents information that will help them support thier children's adjustments to the divorce, Help parents understand how and why conflict between them creates stress for the children, Encourage parents to work hard to decrease conflict, Enocourage parents to cooperate with each other to reduce the amount of conflict their children see, and to Encourage parents to understand that children need a meaningful relationship with BOTH parents.

IMPACT: A six month follow up by the University Specialist showed that in a comparison to a control group not attending the classes, the parents who attended the classes: (1) Were more aware of their children's point of view regarding the parent's relationship with each other (2) Rated their children as being more mature in their view of the parent's relationship (3) Rated their children as being exposed to much less conflict (almost none), (4) Showed knowledge of both what to do and say in order to avoid conflict putting their children in the middle of the parent's problems. The Co-Parenting participates actively engaged in class participation which enhanced their listening and communication skills.

FUNDING: Support through regular extension and Co-Parenting funds

#

TITLE: Divorced - BUT - Devoted to be Dual Parents

ISSUE: Tennessee now ranks 2nd highest in the United States for the number of divorces. The national average is 4.2 for every 1000 people. Unfortunately, Tennessee has 6.4 divorces for every 1000 with only Nevada ranking higher with 8.5. This is not a statistic of pride for Tennessee families or policyholders, nor do we have total conclusive research of why

divorce is so prevalent for Tennessee couples. We do have genuine concern because half of these divorces involve children below the age of 18. Research has determined that children whose parents divorce are more likely to have emotional or behavioral problems. Most of these problems seem to be related to ongoing conflict between the parents after the divorce.

WHAT HAS BEEN DONE: After success of a University of Tennessee Agricultural Extension Service pilot parental education program for divorced parents in the 21st judicial district, the Tennessee Legislature mandated an amendment to the Tennessee Code Annotated, effective January 1, 2001, requiring divorcing parents of minor children to attend a minimum of 4 hours parenting education classes, to complete a parenting plan, and to seek mediation before using litigation. The purpose of this legislation is to acquaint divorcing parents of the needs of their children and to resolve their differences in less adversarial atmospheres. Trousdale County is a part of the 15th Judicial district along with other surrounding rural counties of Jackson, Macon, Smith, and Wilson. For 2002, the FCS Extension agents in these five counties offered the Parenting Apart, parent education class monthly on a county rotating basis. Certificates for attendance were presented to each participant at the conclusion of four hours classes and forwarded to the appropriate court personnel where each divorce is being filed.

IMPACT: Significant gains in communication skills among parents have occurred. Trousdale County had 25 participants in 2002 and post-class evaluations reported that 67% would remove their children from the middle of their spousal conflicts. 50% were willing to use the new skills learned about "I" messages when communicating with their ex-spouse. 75% of all the participants ranked the class as very worthwhile of their time commenting that it gave them positive insights in how to deal with former spouses. The 6 month follow-up evaluations conducted by Dr. Denise Brandon, UT Family Life Specialist concur that 50% of the participants did improve their message communication skills. One of the participants said, "perhaps if he had training on these communication skills early in his marriage, perhaps the tension and difficulties could have been resolved, before filing for a divorce". 100% of the parents agreed they did love their children and didn't wish to foster more trauma in their children's lives. They would agree to work together to be dual parents, even though divorced.

FUNDING: Participants to the Parenting Classes pay a \$25.00 fee per person with \$12.50 being forwarded to the University of Tennessee for publishing curriculum, and \$12.50 remains in Trousdale County for class

location fees and marketing of the program.

#

TITLE: Parenting

ISSUE:

State Legislature mandate for parents educational seminars for divorcing parents, and the high number of divorces involving minor children were indicators of need by agent for teaching Co-parenting classes. Improved parenting skills can help parents raise caring, competent and healthy children.

WHAT HAS BEEN DONE:

- * Extension planned and conducted monthly Co-Parenting classes using the curriculum Parenting Apart, Effective Co-Parenting. Twelve four-hour classes were taught for 100 parents. A total of 20 days were devoted to teaching, evaluating , preparing and reporting time spent in co-parenting efforts.
- * Extension also planned and conducted with the help of the Even Start coordinator 36 one-hour parenting classes for 6 parents using the Healthy Children Ready to Learn Parenting curriculum.
- * Extension published 2 issues of Parent Time news for parents of children in preschool - 2nd grade, 1,500 newsletters were distributed to parents.
- * Extension is working with Head Start Early Learning Center to provide parents Healthy Children Ready to Learn Pamphlets. Forty Five parents receives monthly pamphlets.

IMPACT:

Evaluations conducted for Co-parenting classes revealed:

- 97 percent of parents felt the class had helped them understand how children are affected by divorce.
- 93 percent of parents indicated that they would make a stronger effort to work with their ex-spouse for the kid's sake.
- 98 percent of parents planned to use communication techniques demonstrated in class with children and former spouse.

Additional comments from parents in Co-Parenting:

- "This class showed me that it is important to communicate without anger with ex-spouse."
- "This class helped me understand what my child is going through. Very good class"
- "Thanks for helping with issues that I had concerns with."

Evaluations of parenting classes revealed:

- 83 percent of parents reported changing their guidance techniques with their children.
- 75 percent reported that they were eating healthier meals.
- 100 percent of parents felt that the class helped them be better parents.

FUNDING:

Regular extension funds

Co-Parenting funding

#

TITLE: Parenting Successfully - Sequatchie County

ISSUE:

The FCS advisory committee identified the area of parenting and family life (including teen sexuality) as a major priority programming area. Divorce, teen pregnancies, lack of adequate family income, and single parenthood place a tremendous amount of stress on families in Sequatchie County. They felt that educational programs on parenting responsibilities should be targeted at divorcing couples, young teens, head start parents, and families first/adult basic education students.

WHAT HAS BEEN DONE:

8 Co-Parenting Classes for divorcing parents were offered through out the year. These were four hour sessions team taught with FCS agents from two adjoining counties. Average attendance at the classes was 22. The program was endorsed by judges and attorneys from the 12th judicial district of Tennessee.

A series of three parenting classes were held with Families First/ABE classes in the fall. Topics focused on development of a good parent/child relationship, communication, and discipline.

A series of classes on sexual abstinence was presented to 148 8th grade students at Sequatchie County Middle School during the second week of October. It was based on the why kNOW abstinence curriculum. Topics covered included: STD'S, Peer pressure, the importance of family, and the value of sexual abstinence.

A series of four parenting Classes were conducted at the Dunlap Head Start Center in February and March with 10 parents of children at the center. Sessions included group discussions and activities related to

communication, discipline, and development of parent/child relationships.

News articles and radio programs helped promote and inform the public of the importance of parenting skills and to announce and report activities held.

IMPACT:

Post surveys revealed that:

--90 percent of parents felt the co-parenting classes had helped with the divorce/separation

--70 percent responded they were better able to keep their children out of the conflicts created by divorce

--80 percent of head start parents responded that communication with their children was working well, with fewer conflicts.

--118 out of 148 eighth grade students who participated in abstinence course(79.7% said they would delay sex until the were a responsible adult, and 96 (64.8%) said they would delay sexual activity until they were married.

FUNDING: Regular Extension Funds

#

TITLE: Special Interest Class Babysitting

ISSUE:

Many children are forced into situations where they are neither capable nor qualified as a childcare provider. Because of the trend of both parents working outside the home and single parent households, there is a need for children to be taught basic fundamentals of childcare. The increase in the number of latch-key kids warrants lessons on home safety and first-aid in emergency situations. Many children are not only responsible for their own safety and well-being, but also for the safety and well-being of younger siblings.

WHAT WAS DONE:

Because of the growing number of children who are babysitting at an earlier age, a class was developed to teach and train children basic first-aid, age appropriate snacks, games and toys, and the basic techniques for caring for an infant. The class was designed for children between the ages of 10 and 14. The class was offered to all 4-H Members (Grades 5th-8th). Four learning centers were set up for hands-on learning. The first center talked about first-aid and also included home

safety. The second center dealt with age appropriate snacks. The students talked about nutrition, food safety, kitchen safety and then made several fun snacks. The third center dealt with developmental stages of children and age appropriate toys. The students decorated a babysitting bag during this session. The last center showed students how to take care of an infant. The students practiced feeding and bathing an infant, and changing a diaper. A notebook was provided for each participant to help them be responsible and organized as a babysitter.

IMPACT:

Because of this class, 25 (22W-2B-1A-25F) students are able to handle emergencies, as well as the day-to-day necessities of caring for themselves and others. These students demonstrated a working knowledge of first aid and infant care. 100% of the students demonstrated the correct procedure for doing the Heimlich Maneuver. 100% of the students learned how to perform CPR on a child and baby. 100% of the students made healthy snacks. 100% of the students demonstrated the proper procedure for feeding and bathing an infant. 100% of the students demonstrated how to change a diaper. This class helped build self-esteem and confidence of each student who attended. Comments from students included, "I know what to do in an emergency," and "I am now more prepared to be a better babysitter." This class taught life skills (infant care and food preparation) and life saving skills (first-aid). The introduction of the class was a Power Point presentation, which included questions and different babysitting scenarios. All of the answers were addressed during the learning centers. This helped students develop problem-solving skills. We also spent time on handling discipline, which helped develop conflict-resolving skills.

FUNDING:

Regular Extension

TSU Creative Program Delivery Enhancement Grant

#

TITLE: Childcare providers receive training in Blount County

ISSUE: Because of the increase in required hours to maintain licensing, there is a demand in Blount County for continual education for childcare providers which has been met by the partnership of Extension faculty and the Blount County YWCA. Extension has also entered into a contract with the licensing department for the Department of Human Services to provide training for newly hired childcare providers.

WHAT HAS BEEN DONE: Extension has worked with Blount County YWCA, UT Childcare Resource Center, Alcoa City Schools Childcare and Blount County Schools preschool to plan, develop and implement programs for childcare provider for Blount and surrounding counties. These partners and several new partners such as Success by Six, TN-CEPPT, and the Roane County STARS program have come together to form the Blount County Child Care Training Coalition and have successfully worked together to provide coordinated training among the agencies for Blount and surrounding counties.

Agent has also worked with Knox County Extension to provide "First Steps" training for DHS childcare licensing by co-teaching 3 2-hour seminars and providing the new video course for local child care centers to borrow. Programs have been provided addressing subjects of staff development, child development, child nutrition, business management, provider-parent relations, multi-cultural integration, and curriculum development on a monthly basis by Extension personnel and program partners.

IMPACT:

459 childcare providers attended classes presented by Extension agent. (Numbers are less than last year due to the coordinated efforts of the coalition to relieve the volume of any one agency. This is seen as an improvement from the agent's point of view, whose goal was to be able to partner with these agencies and sharing the responsibilities.) Over 80% of participants reported increased knowledge on all subjects presented and over 60% plan to implement some portion of what they have learned in their classroom through curriculum and/or relations with staff and parents. Over 60% participants are repeat attendees. Extension is seen in Blount County as a main source of childcare provider training and has been asked to provide on-site instruction at 2 daycare centers.

Additional comments from participating providers include:

"I try to make sure I attend all of your classes because they are so interesting and I always learn so much."

"This has been the most interesting and informative class I have attended in 12 years."

"I use your handouts and the information with both my parents and staff."

"I have used the information I get from your classes in our weekly parents notes at our daycare center."

FUNDING: Regular extension funds.

KEY THEME - FAMILY RESOURCE MANAGEMENT/CONSUMER MANAGEMENT

TITLE: Parenting and Consumer Education (PACE)

ISSUE: In the third year of a three year contract with the Department of Human Services to provide curriculum and training to facilitators working with Families First (welfare to work) participants, facilitators identified participant needs that had not been addressed in the program to date. Areas of concern in the parenting field included teens as parents and helping children through difficult transitions. Training of new facilitators in the total curriculum was needed and follow-up for current facilitators and certification of facilitators needed to continue. Final evaluations of the program were needed to evaluate impact and effectiveness and helping DHS to transition to conducting the training was another need.

WHAT HAS BEEN DONE: Three lessons were developed on Teens as Parents to tie to lessons already developed. These lessons were requested and reviewed by facilitators and case managers working with teen parents. In addition, a curriculum from Cornell Cooperative Extension on Teens as Parents was purchased for those facilitators working with teen parents. One lesson on helping children through difficult transitions was developed to assist parents in helping their children through transitions such as parents' divorce, death of family members, moving, illness, etc. Two additional lessons were developed to help parents as they make the transition from welfare to work. Evaluations of the PACE program were developed and conducted with facilitators and participants. Data were analyzed and reports were sent to stakeholders. A proposal for a program extension was made but turned down due to state budget constraints. Meetings were held with DHS trainers to help them know how to conduct the PACE training and materials were inventoried for their use.

IMPACT: Data from evaluations of the PACE program for July 1, 2001 through June 30, 2002 revealed the following information:

Total enrolled - 3023

Participants completing - 2208

Participants qualifying for cash bonus - 925 (\$100)

Participants increasing skill level as reported by facilitators - 2199

Participants using new practices as reported by facilitators - 1854

Increase in level of knowledge of Kid Smart from 3.16 to 4.69

Participants indicating practicing new behaviors as a result of class ranged from 29% to 55% for behaviors listed.

In the period from July 1, 2002 to Dec. 31, 2003, evaluations have been

received from some facilitators. Data indicate the following:
Total enrolled - 228
Participants completing - 124
Participants qualifying for cash bonus - discontinued
Participants increasing skill level as reported by facilitators - 117
Participants using new practices as reported by facilitators - 137
Increase in level of knowledge of Kid Smart from 3.55 to 4.84
Participants indicating practicing new behaviors as a result of class ranged from 26% to 64% for behaviors listed.

FUNDING:

Contract with Tennessee Department of Human Services for \$416,294.00 from July 1, 2001 through June 30, 2002.

KEY THEME - WORKFORCE PREPARATION - YOUTH & ADULT

TITLE: WORKFORCE PREPARATION

ISSUE: Even though the unemployment rate in Tennessee has remained relatively low overall, there are areas within the state that still have double digit unemployment. Unemployment in these areas has persisted because of plant closings, changing farm economy, and /or low educational level. Lack of skills necessary for finding employment can result in financial problems and stability of families. In some instances, lack of job hunting skills or knowledge of how to present themselves appropriately to potential employers can prevent individuals from finding jobs for which they are qualified. In some cases, additional job-related training may be needed. Workforce preparation programs that provide job seeking skills, prepare people for the hiring process, or to identify opportunities for these individuals to acquire necessary job-related training can help address these needs.

WHAT HAS BEEN DONE: In Davidson County, 244 youth participated in three one-hour sessions covering various topics on manners: best foot forward, it's easy to be polite, greetings and introductions, telephone manners, and table setting etiquette. These sessions were taught using videos, group discussions, hands-on experience, visuals, handouts and demonstrations. In the same county, 624 members were enrolled in 25 traditional 4-H clubs. Extension agents developed and presented educational programs in the areas of parliamentary procedures, public speaking, written and oral communication using different teaching methods (group discussions, working in teams, using visuals, speaking, voting, research and exhibits).

IMPACT: Evaluation included a pre- and post-test of table etiquette and manners. Eighty five percent (207 of the 224 participating youth) increased their knowledge of appropriate manners.

The youth had an opportunity to observe each other's actions for correct behavior as a class assignment. Each participant demonstrated skills learned through role-playing.

FUNDING: USDA/CSREES and TSU Cooperative Extension Program

#

TITLE: Workforce Preparation

ISSUE: The issue being addressed in this program is that many young adults are lacking the skills they need to be competent and successful in the workforce. This includes financial management skills, people skills and ethics basics, as well as skills pertinent to specific careers. This need is reiterated by results of surveys distributed among local businesses by the Education Edge Community Partnership, a local grant funded group. This is also an important issue to our Williamson County 4-H Advisory Committee and is on the priority program list of both the district and state extension programs.

WHAT HAS BEEN DONE:

Agent:

Participated in "On My Own" inservice to learn about the program.

Completed trifolds necessary to facilitate the simulation program for "On My Own".

Participated in and helped facilitate a "Reality Store" at a middle school in Cheatham County in order to better understand how this very similar program worked.

Observed that student participants were amazed at how fast their money ran out and that they were quickly made aware that there are many factors to consider in managing your finances.

Marketed the program to the Coordinator for Career and Technical Education at the county schools.

Marketed the program to the Instructional Facilitator at the local city school system.

Talked with a few local businessmen about helping facilitate such a program.

Did not accomplish goal of conducting training, classes, and 2 simulations for "On My Own" here in our county. (The activities, plans, reports, and meetings for the "Character Under Construction" Coalition took many more hours than I had anticipated along with the myriad other 4-H activities.)

Promoted and facilitated the Williamson County 4-H Scholarship Program which has become a successful incentive program for our 4-H members to stay in 4-H and to set goals for future education and careers.

Sent and received applications for 4-H scholarships.
Facilitated interview workshop for participants.
Formed and facilitated a 5 member scholarship selection committee consisting of sponsors, advisory board members, and community leaders.
Facilitated interviews of nine applicants in 2002.

IMPACT:

Nine senior high 4-H members received valuable experience in making applications and participating in interviews in 2002.
In 2002, two 4-H members received \$1000 scholarships and two received \$500 scholarships to help with higher education fees.
Marketing has begun with both public school systems for "On My Own" workshops and simulations.
Agent is planning to make "On My Own" programs a reality for 2003 to help meet the important goal of helping to prepare students with skills they will need for the workforce.

FUNDING: Regular Extension and Dr. John Dabbs of Oak Ridge, TN (sponsor of seed money for "On My Own")

#

TITLE: Preparing Youth for the World of Work

ISSUE:

Research has shown that 94% of teenagers use their parents as a financial information source, yet Tennessee continues to be a national leader in personal bankruptcies. Additional research shows that 34% of students report that their parents rarely or never discuss setting financial goals, including savings or investment, with them. Additionally, the Giles County 4-H Advisory Council and school principals in four Giles County schools confirmed that workforce preparation and financial education were major needs for the county's youth.

WHAT HAS BEEN DONE:

To tackle the timely issues of financial management skills and workforce preparation, a 4-H school enrichment program was planned, targeted to 7th and 8th grade youth. This program used the TIRES model (Trends, Interests, Relocation, Education/Training, and Salary Goals) proposed by Extension Specialist Dena Wise.

More than 500 7th and 8th graders in Giles County have received 5 hours of workforce preparation instruction, culminating with the ON MY OWN simulation. This simulation assigns each student a career, monthly income,

and family situation. Students are challenged to budget their income for one month among multiple needs and wants, such as food, clothing, child care, transportation, housing, and more. In cooperation with the Extension Family and Consumer Science Agent Myra Walker, more than 10 volunteers were recruited and trained to assist with the ON MY OWN simulation. Seven teachers and guidance counselors were recruited and trained to assist with the ON MY OWN simulation and to conduct the evaluation and follow-up with the students.

IMPACT:

Teachers and guidance counselors surveyed 183 youth participants (almost 40% of all participants) after the ON MY OWN simulation. Intact classes of participants were randomly selected for the surveys. These impacts were reported:

78% thought more about or changed their future plans as a result of this program.

39% learned how to write a check and keep a checkbook register.

70% learned the amount of deductions from your paycheck.

63% learned some factors to consider in relocating.

50% learned the connection between occupation and lifestyle

58% learned "how much money it takes to live."

49% learned how a family makes a difference in finances.

43% learned the connection between education and their future career.

During the ON MY OWN simulation, one young man found that he could not meet his basic needs for food, clothing, and shelter because of a sports car payment. "I have learned that you cannot eat motor oil and gasoline," he said.

Other comments from participants included:

"I have learned that you have to handle your money wisely or you run out."

"This is what you have to do when you are grown up. I have learned to use my money wisely."

"I have learned how hard my dad actually works."

"I have learned not to waste money on stuff I don't need."

FUNDING:

Supported through regular Extension funds.

#

Title: Workforce Preparedness / Career Awareness & Career Choices

ISSUE: Middle and High school students are not preparing for career choices after high school. Students lack career awareness and fail to make the connection between their career choices and their class selection, school grades, personal interests and commitment to performing tasks as a part of work.

WHAT HAS BEEN DONE: A collaborative effort was established with the PENCIL Foundation, Oasis Center and Jobs for Tennessee Graduates to increase student awareness of how personal interests and choices influence career options and opportunities. The Reality Check activity was utilized as the teaching method used to assist teens in learning about how education level affects income and quality of life. One hundred thirty-six students participated in the program.

IMPACT: Survey results indicated:

95% of students increased their awareness of the relationship between the level of education achieved, job opportunities and future salaries.

74% of participants increased their awareness of making career choices.

71% of students increases their awareness of the importance of staying in school and receiving a good education.

After experiencing Reality Check, students reported increased awareness of budgeting their money (77%), making wise financial choices (76%), and the added expense of having children (68%).

While 50% of students indicated they were not able to save as much money as they wanted, 84% responded they would plan for unexpected costs.

Student responses to the question "What did you learn from this program?", many students wrote of the importance of staying in school and getting a good education. One student stated "Dropouts can't support a 4 person family". Students also indicated they learned how to budget their money, how to balance their check book and the importance of saving money.

FUNDING: Regular Extension funds.

B. STAKEHOLDER INPUT

Each department continues engagement in strategic programmatic planning. In each case a wide range of stakeholder groups are represented. Individuals from these groups are invited and encouraged to participate in the process.

The UT Agricultural Extension Service completed its strategic plan in 2000, but continues the implementation of the plan. Extension program planning continues to involve program stakeholders at the local county level through the use of advisory groups as outlined in the Plan of Work. The Extension organization as a whole receives guidance and input from a State Extension Advisory Council whose members represent various programmatic and regional interests. The State Extension Advisory Committee met twice during 2002 and were heavily involved in the continued implementation of the strategic plan. Members were provided with status reports regarding progress toward accomplishing the strategic plan and were asked for feedback regarding their perceptions of how Extension was doing across the state.

The Institute of Agriculture completed its overall strategic plan for the Institute earlier this year. This plan takes into consideration the existing plans of the Agricultural Experiment Station and the Extension Service.

Departments continue to be in various stages of the programmatic planning cycle. Some are in the initial stages, while others have advanced to the point of having appointed standing advisory stakeholder committees. Programmatic planning is a continuous process that is dependent on variation in clientele and organizational needs, availability of resources, and the abilities and skills of personnel in the organization.

The means of identifying stakeholder groups and individuals, naturally, varies among disciplines. In the case of Forestry, Wildlife and Fisheries Science, for example, interest groups ranging from environmental advocates, landowners, forest product companies and others were identified. From the identified groups, a balanced set of individuals were selected for intensive input solicitation. These were invited to meetings on campus for the purpose of evaluating plans. Later, the group was formed into a standing advisory group which meets regularly and provides counsel on Extension, teaching and research issues. For example, stakeholders provided impetus for developing a Ph. D. in the department.

The process for consolidating departmental stakeholders into an Experiment Station wide organization is still being planned.

The UT Agricultural Extension Service and TSU Cooperative Extension Program continue to use the network of county advisory committees that was described in the FY 2000-2004 Plan of Work. Both Extension organizations also continue to involve and utilize statewide advisory committees to provide direction for broader organizational issues.

C. PROGRAM REVIEW PROCESS

The program review process outlined in the FY 2000-2004 Plan of Work has not been changed.

D. EVALUATION OF THE SUCCESS OF MULTI AND JOINT ACTIVITIES

The multistate, multi-institutional and multidisciplinary and joint research and extension activities, as in the past, were valuable in addressing the strategically important areas of needed focus. The annual planning sessions between research faculty and extension specialists are critical in developing research and education programs which effectively serve the Institute's clientele. Extension specialists, as a result of their ongoing contacts with clientele, contribute an awareness of strategic issues which need to be addressed. Moreover, research faculty contribute an awareness of scientific progress which has been made not only in their own laboratories but also within the scientific community at large. This latter awareness is greatly aided by their own participation in multi-state and interdisciplinary efforts.

By expanding the scope of joint activities, research programs have included more interaction with Tennessee State University. This interaction has led to a greater incorporation of minority clientele. Moreover, inclusion of broad advisory groups has expanded the scope of interest to other groups, including but not limited to environmental groups and production interests between agricultural producers and consumers.

The extent to which planned programs described expected outcomes and effects varied by the maturity of the effort. The growing joint program in Food Safety described the desired outcomes in detail within a business plan. Alternatively, programs which incorporated new clientele were more general in nature.

Multi and joint activities by their nature direct programs toward greater effectiveness by incorporating various disciplines and functions into the planning process. Excellent examples may be found in the food safety program and the fruit and vegetable program. In these cases, the expertise of scientists from many disciplines and organizations were able to plan for the desired goals, helping assure that errors of exclusion were avoided. Moreover, the shared effort of multi-state programs such as precision agriculture consolidate the efforts of scientists with different but related interests and expertise to help assure rapid consolidation of developments.

E. MULTISTATE EXTENSION ACTIVITIES - Tennessee

Summary Attachment

Beef Cattle Management and Marketing Systems - Beef cattle producers are experiencing many changes in the beef supply chain, and information is becoming a critical part of the management and marketing of cattle. A Fund for Rural America regional Beef Systems Computer Software Project. This project is a multi disciplinary cooperative project between The University of Tennessee Agricultural Extension Service and the University of Georgia Cooperative Extension Service provided an opportunity to help insure that beef producers exercise good forward planning in making beef management decisions.

Beef cattle record keeping software has been developed and distributed to 296 users in 27 states. Enterprise budgets were developed for beef cattle and forage enterprises and distributed to 2,000 producers. This production and economic data is enabling more beef cattle producers in Tennessee to improve their business management skills. Improved livestock records allow beef cattle producers to improve their efficiency. A quote from a user of the beef cattle record keeping software being distributed: "I use your software every day, and don't make any decisions without first checking my printouts. I can't manage my cow herd without this information."

4-H Character Education Initiative - To equip Extension faculty to facilitate change in affective, cognitive and psychomotor domains of character development, The University of Tennessee 4-H program partnered with The Josephson Institute of Ethics to conduct two intensive, simultaneous 36-person Character Counts! Trainer Certification Seminars followed by a two and one half day Invitational Character Education Conference for parents, teachers and community leaders. Participants have reported community coalition formation, inservice training for teachers, organization of task forces, parent training, teen training, new audience involvement (pregnant teens, prison women, grandparents, judicial referrals), camps and retreats, sports training and community wide training. The greatest impact to date is the formation of numerous community coalitions to develop and conduct character education programs in the counties, with Extension serving in a leadership role in the coalitions' formation, and the increased awareness of the need for character education.

Multi-State Burley Tobacco Expo - County Extension agents and tobacco specialists from TN-VA-NC planned and conducted a tri-state Burley Tobacco Expo held in January at Kingston, TN. Over 300 people from Kentucky, Virginia, North Carolina and Tennessee participated in the Burley Tobacco Expo.

Northeast Tennessee Beef Expo - Presented by the UT Agricultural Extension Service and the Tennessee Agricultural Experiment Station at the Tobacco Experiment Station at Greeneville, this cooperative beef field day was planned and conducted to aid producers in identifying and understanding new technologies and information already available that will improve the overall competitiveness of the Tennessee Beef Industry. Expo sessions and exhibits helped producers learn first hand from Extension specialists, industry leaders, and researchers about new methods

and techniques that can help achieve more efficient and profitable operations. A trade show featured sponsors and the products they offer to make beef operations more profitable. For those producers who wished to pursue the certification process for Beef Quality Assurance training, an opportunity to take the test for certification was offered during the Expo program. The 2001 Beef Expo attracted approximately 300 beef producers from Tennessee, North Carolina, and Kentucky for a day of demonstrations and discussions of practical ways producers can improve their operations and their security in a quickly transforming marketplace.

Multi-County/Multi-State Hay Day - Hay Day 2001 was held in May 24 in Benton County, TN. 150 producers, agents and equipment dealers participated. The field day consisted of 6 educational stops, educational displays and numerous hay equipment exhibits and demonstration. Hay Day is planned and conducted by Extension agents in nine Tennessee Counties with assistance from agents in neighboring state counties. Agents from Kentucky also provide assistance in years when the Hay Day is held in northwestern Tennessee counties.

Milan No-Till Field Day - The Milan No-Till Field Day is a cooperative endeavor between Extension and Experiment Station faculty and staff from Tennessee, with participation and assistance from Extension and Experiment Station personnel from various neighboring states, including Mississippi, Kentucky, Arkansas and Missouri. In 2002, over 5,000 people participated in the No-Till Field Day. Visitors to the 2002 field day came from 90 Tennessee counties, 15 states, and 3 foreign countries.

A Comparison of Demographic Variables, Food/Nutrient Intakes, Level of Food Security, and Food/Nutrient Changes with Intervention Among Food Stamp and Non-Food Stamp Recipients in South Carolina, Tennessee, and Virginia - This study, conducted with funds from a Southern Rural Development Center grant supplemented by Smith-Lever funds, examined the role of food assistance, nutrition education, and mother's workforce participation on the dietary patterns of rural households in South Carolina, Tennessee, and Virginia. The researchers utilized data collected from participants in the Expanded Food and Nutrition Education Program (EFNEP) and the Food Stamp Nutrition Education Program (FSNEP) in the three states during the 1999 reporting year. Data on intake of foods and nutrients and food-related behaviors were used to compare Food Stamp recipients with non-Food Stamp recipients on relative dietary adequacy, recommended food-related behaviors, and other factors. The individual states conducted data collection and analyses which provided state-specific information. In Virginia, dietary and food-related behavior data were used to compare participants on the effect of workforce participation. South Carolina examined the feasibility of using the state's Electronic Benefits Transfer system (EBT) to examine the food purchase patterns of Food Stamp recipients, and to compare these purchasing patterns with those of non-Food Stamp participants. Using two different instruments, South Carolina and Tennessee researchers explored the nature and extent of food insecurity and hunger among EFNEP and FSNEP recipients in those states.

The Changing Rural Health System: Education for Consumers and Providers - Southern Regional Extension and Research Activity Information Exchange Group (SERA-IEG) 19. The information exchange group brings together professionals in the land grant system, office of

rural health, medical and nursing schools, and state health departments, allowing bridges to be built between the disciplines. The objectives of the SERA-IEG are to exchange current information on the status of new research findings and extension programs related to rural health and safety issues, to gain regional perspective on current rural health problems, and to consider joint activities that might be proposed. The SERA 19 group conducted a Southern Extension Health Institute in October in Canton, Mississippi. The Tennessee Extension health specialist served as chair-elect of the SERA, helped plan and served as an instructor for the institute.

Center for Agricultural Profitability - The Center continues to be involved with The Southern Rural Development Center in exploring e-commerce and its impact on rural southerners. The Southern Rural Development Center is exploring the possibility of developing an e-commerce curriculum to educate businesses, consumers and local governing bodies. The curriculum plans to address the role of e-commerce on rural businesses, local governments and residents. The Southern Region Extension and Experiment Station Directors established a task force (SERA-TF11) to link all of the value-added or development centers in the southern region by internet. The search engine is managed by Mississippi State University. This link promotes cooperation and sharing of resources among the participating Universities in their efforts to assist agricultural businesses. Future effort will be directed toward identifying an area of need for the entire region and seeking funds that would address that specific need.

UTK Clean Water in Tennessee Program - The Water Quality Research Team has installed monitoring wells throughout a watershed at Ames Plantation -- a UT Agricultural Experiment Station facility including more than 18,000 acres. Soil cores from the wells have been analyzed and the effects of different agricultural practices on water quality are being measured. The Clean Water in Tennessee Extension program provides leadership for developing, delivering and evaluating educational programs to protect and improve water quality and the environment. The program focuses on three issues: watershed management and protection; clean water in agriculture and environmental quality in and around homes. Team members were involved in the following educational efforts:

- Writing a handbook of best management practices for agriculture and forestry. This project is supported by a contract with the Tennessee Department of Agriculture for \$156,000.
- Creating a Home-A-Syst CD-ROM for middle-school aged youth. This project is supported by an EPA 319 grant of \$51,000.
- Planning, conducting and evaluating five agent training programs with a total of 159 participants. Extension agents are now better prepared to assist their clientele protect and improve water resources as a result of participating in training opportunities.
- Introducing the use of the Internet in agent training.
- Analyzing the economic and environmental impacts of the Environmental Quality Incentives Program (EQIP) on three representative Tennessee farms. This project was supported by a NRCS/USDA contract for \$17,000.
- Developing and conducting the aquatics challenge for area and state 4-H Envirothon competitions and collaborating on preparing the comprehensive question for the state competition. Over 600 high school students and 115 teachers/coaches increased their

knowledge and understanding of water and other environmental issues, through participation in the Envirothon program.

- Participating in planning and conducting three field days. Two of these field days were multi-state events. Over 500 farmers, agency personnel, local officials and interested citizens learned first hand about water quality protection and improvement during the three field days.
- Writing five proposals for extramural grant funding: Almost \$120,000 in external funds were obtained to support more effective water quality educational programming..

Southern Region Program Leadership Committee - Nine Extension staff and faculty participate in the activities conducted by the Southern Region Program Leadership Committee (PLC). These individuals take part in regular meetings, either face-to-face or by teleconference, of the PLC or one of its constituent subcommittees.

One Extension staff development specialist serves as a member of the development team and, subsequently, the management team for the Financial Security in Later Life National Extension Initiative.

F. INTEGRATED RESEARCH AND EXTENSION ACTIVITIES - Tennessee

Summary Attachment

The Food Safety program is an initiative within the UT Institute of Agriculture. Some 40 faculty and Extension specialists are involved. Notably, faculty from across UT and scientists from the Oak Ridge National Laboratory are also engaged. Last year, it received a \$5,000,000 grant. The initial work is directed toward post harvest food quality and milk quality.

The Precision Agriculture integrated program is a broad research/extension effort in which excellent progress is being made in sensory technology and refining nutrition and pesticide treatments to take advantage of more accurate field data.

The Efficiency of Production program is a consolidated research/extension effort of applied production efficiency research and educational programs directed toward improving the production efficiency of farmers in Tennessee. Annual Commodity meetings assist in directing the research and education programs.

The Protection of Environment program is a consolidated effort to reduce the environmental effects of production agriculture on air, water and soil quality. Current efforts center on determining the fate and transport of chemicals in the soil.

The Fruit and Vegetable program is an applied research/extension effort designed , in part to provide alternatives to current tobacco producers in the State. Annual faculty and specialist meetings assist in setting the agenda for the program.

The University of Tennessee Vegetable Initiative was started to assist area vegetable producers with planning, production and marketing information in addition to research and extension work currently underway on vegetable and related topics. The Initiative is a team effort with personnel from several departments within the Institute of Agriculture cooperating. These departments include Agricultural Economics and Rural Sociology, Agricultural and Biosystems Engineering, Entomology and Plant Pathology, Food Science and Technology and Plant and Soil Sciences. Experiment station personnel at the Knoxville Plant Sciences Unit, the Plateau Experiment Station, the Highland Rim Experiment Station, the Middle Tennessee Experiment Station, and the West Tennessee Experiment Station cooperated with research work at each location. Both research and extension personnel have cooperated with work on experiment stations and private farms. Initiative team members are also working with state agencies and markets to further utilize available resources. Team members have been active in recruitment of agribusiness to Tennessee to enhance market availability to producers. Reports were produced by initiative members in 2001 for use by vegetable producers.

Tennessee Forest Products Center - The mission of the Tennessee Forest Products Center (TFPC) is to solve problems for Tennessee forest products producers and provide leadership in research and education to ensure future competitiveness and sustainability of the industry. The

TFPC is focused on providing research and education for the forest products industry in Tennessee, the region and beyond. The following Extension publications were produced: Understanding Log Scales and Log Rules, Tree Crops For Marginal Farm Land - White Pine and Crop Tree Release in Precommercial Hardwood Stands. Three editions of the TFPC newsletter, "Wood Bin" were produced and distributed to primary and secondary Tennessee wood products producers, research partners and other organizations and individuals interested in the forest and wood products activities conducted by the TFPC.

Tobacco IPM program - Tobacco farmers have multiple insect problems every year resulting in economic loss of their crop. Many have not been utilizing an IPM insect control program and have lost money by spraying too many applications of insecticides. In a cooperative effort between UT Extension entomology specialist and a UT research entomologist, recommendations have been updated from insecticide test that were performed at two Experiment Stations in the state. An IPM school was held to train tobacco interns to scout tobacco. Seven interns were trained to scout multiple fields in seven different counties. Approximately 65 acres were scouted. A weekly report was sent to all tobacco counties to alert agents of the most current pest problems on tobacco. The agents were then able to alert their farmers of the current pest situation and what the best IPM approach they should be taking. Grant money from Philip Morris Tobacco Company supported the tobacco interns.

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UT Dogwood Group - The mission of the University of Tennessee Dogwood Group is to improve and protect the dogwood tree and its relatives through breeding, research, and public

communication. The UT Dogwood Group has initiated a breeding program, with the objective of producing disease-resistant cultivars of flowering dogwood. The focus is on development of new cultivars that are resistant to dogwood anthracnose, powdery mildew, and combined resistance to both diseases.

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and safety issues, to gain regional perspective on current rural health problems, and to consider joint activities that might be proposed. The Tennessee Extension health specialist served as chair of the SERA, helped plan and served as an instructor for the institute.

UT Center for Profitable Agriculture - The Center continues to be involved with The Southern Rural Development Center in exploring e-commerce and its impact on rural southerners. The Southern Rural Development Center is exploring the possibility of developing an e-commerce curriculum to educate businesses, consumers and local governing bodies. The curriculum plans to address the role of e-commerce on rural businesses, local governments and residents. The Southern Region Extension and Experiment Station Directors established a task force (SERA-TF11) to link all of the value-added or development centers in the southern region by internet. The search engine is managed by Mississippi State University. This link promotes cooperation and sharing of resources among the participating Universities in their efforts to assist agricultural businesses. Future effort will be directed toward identifying an area of need for the entire region and seeking funds that would address that specific need.

Appendix C

U.S. Department of Agriculture
 Cooperative State Research, Education, and Extension Service
 Supplement to the Annual Report of Accomplishments and Results
 Multistate Extension Activities and Integrated Activities
 (Attach Brief Summaries)

Institution Agricultural Extension Service
 State Tennessee

Check one: Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Title of Planned Program/Activity	Actual Expenditures				
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Integrated committees, meetings workshops and conferences.			98,550		
Integrated projects			1,067,850		
Integrated demonstrations and field days.			16,200		
Integrated curriculum development training			163,400		
Total			\$1,346,000		

Charlene A. Mason
 Director
 Date 4/2/03

Form CSREES-REPT (2/00)

Appendix C

U.S. Department of Agriculture
 Cooperative State Research, Education, and Extension Service
 Supplement to the Annual Report of Accomplishments and Results
 Multistate Extension Activities and Integrated Activities
 (Attach Brief Summaries)

Institution Agricultural Extension Service
 State Tennessee

Check one: Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Title of Planned Program/Activity	Actual Expenditures				
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Multi-state committees, meetings, workshops and conferences.			\$101,750		
Multi-state projects.			\$582,750		
Multi-state demonstrations and field day.			\$29,250		
Multi-state curriculum development and training.			\$212,750		
Total			\$926,500		

Charles J. Norman
 Director
 Date 4/2/03

U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Multistate Extension Activities and Integrated Activities
(Attach Brief Summaries)

Institution Agricultural Experiment Station
 State Tennessee

Check one: Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Title of Planned Program/Activity	Actual Expenditures				
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Competitiveness of Production Systems			695,597		
Management and Marketing			31,240		
Food Safety and Processor Level			116,255		
Balance Agriculture and Environment			86,946		
Promote Sustainable Agriculture			109,610		
Utilize Agricultural Waste Products			69,700		
Preserve and Enhance Water Supplies			75,429		
Total			<u>1,184,777</u>		

Thomas Hundt
 Director
 Date Nov 28, 03

U.S. Department of Agriculture
 Cooperative State Research, Education, and Extension Service
 Supplement to the 5-Year Plan of Work
 Multistate Extension Activities and Integrated Activities
 (Attach Brief Summaries)

Institution Agricultural Experiment Station (1862)
 State Tennessee

Check one: Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Title of Planned Program/Activity	Estimated Costs					
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Competitiveness of Production Systems	600,000	600,000	695,597	650,000	645,000	645,000
Management and Marketing	60,000	60,000	31,240	55,000	55,000	55,000
Food Safety at Processor Level	50,000	50,000	116,255	55,000	55,000	55,000
Balance Agriculture and Environment	140,000	140,000	86,946	150,000	155,000	155,000
Promote Sustainable Management	50,000	50,000	109,610	55,000	55,000	55,000
Utilize Agricultural Waste Products	150,000	150,000	69,790	145,000	145,000	145,000
Preserve and Enhance Water Supplies	30,000	30,000	75,429	35,000	35,000	35,000
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
Total	1,080,000	1,080,000	1,184,777	1,145,000	1,145,000	1,145,000

Form CSREES-PLAN (2/00)

Thomas H. Stewart
 Director
 Date Mar 25 03

